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AMERICAN BEE JOURNAL

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APRIL, 1928

A NEW TREATMENT FOR FOUL-BROOD —JAY SMITH

REHABILITATION IN LOUISIANA —JES DALTON

DEATH OF BEES FROM SPRAY POISONING —V. G. MILUM

AN EASY METHOD OF MOVING BEES —NATT NOYES DODGE

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Superior Italian Queens to June 15: Untested				$1.00	$ .85	$ .75
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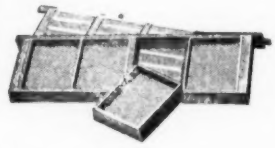
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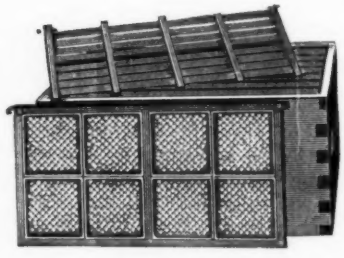
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BEE WARE



APRIL, 1928

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For Spring of '28

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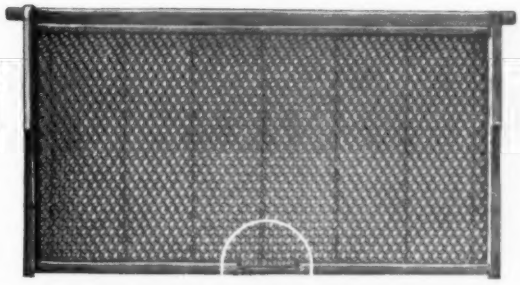
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Dadant's Wired Foundation?



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It is all wired for you. Just take the sheets of **pure beeswax** foundation as they come out of the shipping box and slip them into Lewis Slotted Bottombar Frames. Nail in the wedge and the job is done. Only five nails with the handy old hammer and your foundation will hold the heaviest of combs.

In brood nest or super every cell is drawn out to worker size. The foundation fills the frames and the new combs are full size, giving the queen perfect laying freedom and allowing maximum room for the storage of surplus honey.

Replace your under-size, drone and sagging cell combs with frames of Wired Foundation. Let your colonies build up from full-size combs. Extract from smooth, even, well-filled combs. Your bees will work to your advantage with Dadant's Wired Foundation and Lewis Slotted Bottombar Frames.

Dadant's Famous Foundations

Wired — Plain — Surplus

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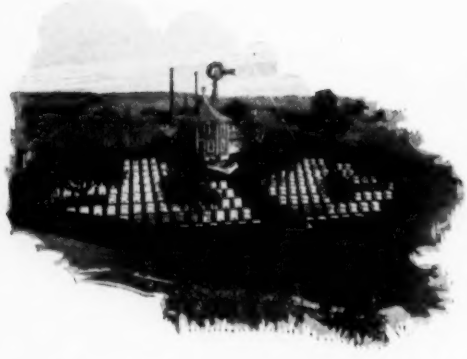
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AMERICAN BEE JOURNAL



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A New Formalin Treatment for American Foulbrood

By Jay Smith

> This is the first of two articles dealing with an advanced method of treating combs from colonies with American foulbrood. The author has found it possible to treat his combs at a cost of less than one cent each in addition to his labor.

I HAVE been reluctant to enter into a discussion of the problem of American foulbrood, fearing an erroneous impression might be made and beekeepers led to believe I had this disease in my yard and that those obtaining queens from me would be in danger of introducing the disease into their apiaries. In defense let me say that I have been given a clean bill of health by the inspectors every year since I have been shipping queens. In the last twenty years I have had several cases show up, but where they came from I cannot say. Possibly robbing at a distance. It was quickly treated and soon eliminated. I have shipped all queens on candy made from invert sugar, and no honey has been used. It can easily be seen from the above that no reasonable man would feel that there was the least possibility of transmitting disease. Where queens are shipped from healthy nuclei and invert sugar is used instead of honey, it is impossible to transmit disease.

However, I have been very much interested in any method that might help the beekeeper to obtain more perfect control over this dread disease, and for nearly twenty years have experimented whenever I could get combs that were diseased.

When I say "dread" disease, I mean just that, for if there is anything that strikes terror to the heart of the beekeeper it is American foulbrood. Many an enthusiastic amateur has gotten along nicely in the bee business and has been filled with the joy of studying bees until disease hit him, when he threw up his hands and quit. In my own case, when I first discovered it, I wondered after all if there were much pleasure in keeping bees. After I had bought the best equipment and had carefully wired all frames, and after the foundation was nicely drawn, to find a few cells of this disease and know I would have to burn up all combs in that hive dampened my enthusiasm, to say the least.

To the commercial beekeeper, the disease is even more discouraging than to the amateur. Some have had to destroy from 5 to 10 per cent of their colonies every year. I know of no other industry that could stand such a loss and survive. In many large business concerns the profits are less than those figures. If it were left to a vote of the beekeepers, I feel sure they would vote by a large majority that American foulbrood is their greatest problem today. It has spread to all sections where beekeeping is practiced, with few exceptions, and is stealthily gaining ground. Like the codling moth, the San Jose scale, and now the corn borer, American foulbrood is with us and is here to stay. When San Jose scale first came we thought that was the end of the apple business, and many an orchard was put out of business. But now, with the improved oil sprays, San Jose scale is one of the orchardists' least worries. So it is with most pests and diseases. So it will be with American foulbrood.

With the method I have used for several years in sterilizing combs, this disease has lost its terror for me. In fact, in a few instances, I have deliberately set combs containing this disease into healthy colonies, that I might have some combs with which to experiment.

American foulbrood is largely a man-made disease—that is, it would not spread and be a menace if it did not have the help of the beekeeper. It has been spread by shippers and movers of nuclei and colonies. It has been spread in honey and in package bees, and in queen cages where honey was used in provisioning. When it once gets a foothold in an apiary, the beekeeper spreads it by making increase and by scattering extracting combs from diseased to healthy colonies.

In the winter of 1918 and 1919, while doing extension work in California, I had a splendid opportunity to study this disease. Many beekeepers would say they could handle the disease easily if it were not for the fact that their neighbors two or three miles away had it and their bees were getting reinfected from them. When these neighbors were questioned, they would say the same thing, each laying the blame on the other. It was plain to me that nine cases out of ten were caused by the beekeeper himself and not by his neighbor.

The first American foulbrood I ever saw was at the World's Fair in St. Louis at the National Beekeepers' Association meeting. N. E. France had a frame and showed it to those present. This was twenty-three years ago, but I remember I felt sure some method could be evolved to treat the combs without destroying them. While I had no disease in my yard, I did a little experimenting with different chemicals to see how the bees would behave, believing that if some disinfectant could be found that is not objectionable to bees we would find something that would kill the germs.

I will not go into detail here and tell all the things I tried, for they would seem foolish. But I wish to tell a few. I soaked a comb in formaldehyde, and after airing it I gave it to a black swarm that I had hived

a few days before. No sooner did those blacks smell the drug than they took the air and never came back. This made me believe that the odor was so offensive that it could not be used. Later I got some diseased combs to experiment with and was able to drive the disease out of a few combs, but the work and time that were necessary rendered the method impractical. In one case I examined a diseased colony every day, and in every diseased cell I placed a drop of strong concentrated lye. I was sure this would eat up the diseased mass and later I would clean it out. I was greatly surprised to see that the bees had removed the lye and polished up the cells. More cells kept appearing. I worked on one colony most of the summer and finally effected a cure, but decided this method was not practical.

Another drug used in experimental work was iodine. It is considered a good germicide, and it has been stated that one drop of iodine in a pail of water will kill all germs. I personally do not believe this, but do not know. I mixed iodine with sugar syrup and fed it to bees. They took it readily, although I used a tablespoon full to the gallon. The syrup smelled and tasted of iodine. I believed at the time that it slowed down the disease, but it did not cure. So these were given up and when a case showed up the bees were shaken and the combs were burned in the good old-fashioned way.

I could not see much profit or pleasure in continually burning up frames that had cost me so much in money and labor. If I could only have used the system then that I am using now, I would have saved some money and a heap of worry. Of course, we worry the most over the things that never happen, but the worry is there, nevertheless. With our present method, costing all told, for labor and material and equipment, less than a cent per comb, the work is easy and pleasant and American foulbrood is no longer a menace. I smile at the worry of twenty years ago.

Dr. Hutzleman gave us a splendid method of sterilization in his alcohol-formalin solution, which marked a great advance in the control of disease, and too much credit cannot be given him, for it has proven to us that combs can be saved and it encouraged us to go on experimenting. The water-formalin has given good results with some. But the expense for material and equipment and the unpleasant gas have caused many, especially the small beekeepers, to go back to burning.

Believing that some of the powerful gases used during the war might be used, I began investigating. All authorities advised me that, of all gases, formaldehyde was the most destructive to germs. One of our local physicians, whom I consider an authority on such matters, informed me that disease germs could be placed in a book and the book closed, and when placed in a tight box containing formaldehyde gas the germs would be killed. It took time, however, for the gas to penetrate.

Farmers' Bulletin No. 926, "Some Common Disinfectants," states that formaldehyde gas is more effective at a high temperature and is not effective under a temperature of 65 degrees. Another government bulletin, Department of Agriculture Circular No. 284, "The Sterilization of American Foulbrood Combs," states: "Numerous attempts have in the past been made to use formaldehyde gas as a disinfectant, but it failed to sterilize infected combs completely, except in a few carefully controlled cases, so that eventually the use of this material for disinfecting combs was entirely abandoned." The reason given is that it is difficult to hold the gas on the combs long enough to be effective on account of **leakage to the outside.**

After studying everything I could find on the subject, it seemed apparent to me that, if formaldehyde gas could be used on the combs at a high temperature, with plenty of moisture to make the gas more effective, and if the combs were gassed long enough, all germs of disease would be killed.

This belief was strengthened after reading the bulletin named, for it mentioned badly diseased cells being sterilized when immersed in formalin solution where no liquid entered the cells, but merely the vaporous gas. This was in the case of capped cells. **And these cells were sterilized when treated but forty-eight hours.** Truly if the gaseous vapors could sterilize in forty-eight hours, all spores would be killed in sufficient time. The bulletin states that better results were obtained with water-formalin than with alcohol-formalin solution. This is to be expected, for as alcohol gas does not kill the spores, it would merely be in the way and would dilute the formalin, which is the killing agent. It appeared to me that either alcohol or water is merely the medium for carrying the gas, and if that were true why would not air be a better and cheaper medium for this purpose? It will enter cells where liquid will not. Formalin gas will penetrate into the most dense cocoons if given time and the atmosphere is moist. It will penetrate brood cappings with ease and will go to the bottom of cells filled with pollen, so that the pollen will swell with moisture and come crawling out of the cells like worms. But it needs **time, temperature,** and **moisture.**

(Editor's note: The second article will give the exact method of using formalin gas as worked out by Mr. Smith.)

(To be continued in May)

Wisconsin Skyscrapers

The picture represents two Carniolan colonies run for extracted honey during 1927. Neither colony swarmed, was divided, had brood removed or given to it. And I might add that neither tipped over, since they were well braced with fence boards on all sides previous to the taking of the picture and the supers were taken down immediately afterwards. No record was kept of the colony on the left, but the colony on the right produced 405 pounds of all white



surplus in thirteen shallow extracting supers, and weighed at least 150 pounds when it was packed for winter in its two jumbo hive bodies. Its height (not including stone) was nine feet. During my eighteen years' beekeeping I have had colonies gain 400 pounds on a scale, but never before did I actually take away 400 pounds surplus. Much credit for this yield belongs to Harvey Weavers, who gave the surplus room when and where needed from June 20 to August 20, during my absence.

Ivan Whiting, Wisconsin.

Death of Mrs. Griggs

Mrs. Lena May Griggs, wife of Samuel Griggs, of the Griggs Honey Company, died at the family home at Maumee, Ohio, March 1. She married Mr. Griggs on April 28, 1898, and three children were born to them, all of whom were at home at the time of her death.

Merger In Beekeeping — The Pacific Slope Honey Co.

Through the authorized efforts of Directors O. A. Sippel and Charles Brittain, and the general manager, with the Western Washington Beekeepers' Association, a merger has been effected between the two in the operation of the bottling plant at Seattle, Washington, resulting in the incorporation of the Pacific Slope Honey Company, owned jointly by the Western Washington Beekeepers' Association and the Mountain States Honey Producers' Association. The Pacific Slope Honey Company will bottle and ship all of the honey of the Western Washington Beekeepers' Association and the Mountain States Producers' Association used in the Seattle trade area.

It is estimated by Director Brittain that this plant would use twenty carloads of honey from the Mountain States honey producers in 1928, and not less than eight carloads of the 1927 crop should be held for this plant. The general manager has already ordered shipment of several cars of Wyoming, Montana and Idaho honey for it, and may call out other cars for the month of March.

In connection with the new plant at Seattle there is a bonded warehouse, licensed under the Federal Act, so advances on honey shipped to the plant can be secured, simplifying the finances. The Mountain States Honey Association, therefore, did not have to put up any money to effect the merger, thanks to the generous spirit of the Western Washington Association.

Creamed Honey

Director O. A. Sippel, of Montana, has been particularly interested in a new product put out by the Mountain States Association, a creamed honey, made by grinding crystallized honey and whipping it with a special machine. It makes a creamy, delicious product, quite similar to marshmallow cream. The association puts it up in 2¼-pound cans, six cans to the case, built for the purpose.

A special car of this product was shipped from Hardin, Montana, to New York, for the New York markets. The John G. Paton Company reports that, following a radio lecture by Alfred W. McCann, the nationally known food specialist, in which he recommends the use of natural candied honey, over five hundred orders, accompanied by checks, came in to the office of the Paton Company, the New York representative of the Mountain States Association. By the second day, orders had run up to 1600 cases.

The first car shipped from Hardin had only 2300 cases. In eight days' time the entire car was sold out and orders listed on the second car. The Paton Company notified the association that they will need at least ten cars for this business before the new crop comes on, and have requested that honey be held over for the purpose. New York should take several carloads of this honey during the coming year.

The "Beewhiskered" Man

By Earle O'Day

Stimulation of public interest in bees and bee management is an integral part of the sales campaign of George Biggers, 22-year-oid apiarist of Pasadena, California, who has recently opened headquarters for his traveling apiaries in that city.

Confronted with a comparatively large overhead for his space in an exclusive market, Mr. Biggers desired to place himself in the public eye without undue expense for advertising. In consequence, he hit upon a plan which has earned him state and even national notice as the "bee whiskers man."



Mr. Biggers appears occasionally in public at his stall with a long piece of cloth dangling from his chin, ending in a point near his waist, and fastened with a string over his head. Capitalizing on the knowledge that bees dislike the human odor and the human breath, Mr. Biggers uses the cloth as a groundwork for his beard of bees.

The hive having been quieted with a few moments of smoke, he brings it onto a platform enclosed by netting. One by one he removes the frames, jarring the bees into a bucket. Many of them take to the air, and the crowd which has gathered by this time shrinks back, even though the bees are safely caged. Reassured by the familiar manner in which he scoops the bees up by handfuls, they approach again, and invariably remain to see him finish the task. This is accomplished by patiently encouraging the bees to form in a cluster on the cloth groundwork. Eventually the cloth is entirely hidden.

Then comes the high point of the act, for Mr. Biggers is not only a good bee man, but a good show man. Taking a mirror in one hand and a long, soft brush in the other, he proceeds to "trim" the beard by brushing the bees into shape! This finished, he saunters from the protection of the net cage, and the Pied Piper could have no more awe-struck following than he.

The whole thing is a spectacular maneuver, and though not without its measure of risk, is comparatively simple of accomplishment.

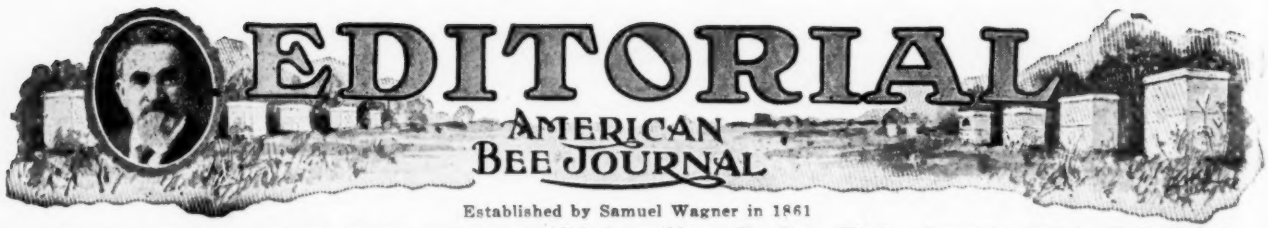
Mr. Biggers, although so young, has had a long experience with bees. He owns some six hundred colonies, which he keeps moving from place to place in four counties, thus assuring their presence at good honey sources. The product is extracted in the field and marketed from his Pasadena headquarters.

Selling Expense of Mountain States Honey Association

The selling expenses of the association have been much less than expected. Exact amounts, of course, cannot be determined until all the honey has been sold. Members at the annual meeting said they would be satisfied if the expense did not exceed 5 per cent, which is equal to that of the Colorado Honey Producers' Association. The Ontario association has a selling expense as high as 14 per cent. It is the hope of the management of the Mountain States Association that their actual expense for selling will be less than 5 per cent.—From March 1 News Letter, Mountain States Association.

Membership in Mountain States Association

According to Mrs. Forrest's report, Secretary of the Mountain States Honey Producer's Association, there are 284 members signed up, with 75,000 colonies of bees. Of these colonies, Idaho has 29,595; Utah, 20,095; Montana, 3,717; Oregon, 4,368; Wyoming, 10,655. North Dakota has just joined with 5,000 colonies and thirteen new members. From all prospects, there will be 100,000 colonies signed up before next season's crop is ready for delivery.



Established by Samuel Wagner in 1861

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The Corn Sugar Bill

At the time we go to press there have been no new developments in relation to the corn sugar bill. Hearings have been deferred in both house and senate and it now appears that the hearing may be before the senate committee, rather than before the house committee. Since most of the protests have gone to members of the house committee, it will be well to send protests to the members of the senate committee. The members of this committee are as follows, and they may be addressed, U. S. Senate, Washington, D. C.:

Senate Committee on Agriculture and Forestry

McNary, Charles L., Oregon; Norris, George W. Nebraska; Capper, Arthur, Kansas; Keyes, Henry W., New Hampshire; Gooding, Frank R., Idaho; Norbeck, Peter, South Dakota; Frazier, Lynn J., North Dakota; Gould, Arthur R., Maine; Smith, Ellison D., South Carolina; Ransdell, Joseph E., Louisiana; Kendrick, John B., Wyoming; Heflin, J. Thomas, Alabama; Caraway, Thaddeus H., Arkansas; Mayfield, Earle B., Texas; Wheeler, Burton K., Montana; Thomas, Elmer, Oklahoma; Henrik Shipstead, Minnesota.

Apparently the only chance the bill has of passage is under the mistaken impression that it is a farm relief measure. There is no reason why corn sugar may not now be sold for any purpose for which it is adapted. The pure food law requires only that articles of food be sold for what they are. There is no discrimination against corn sugar in this provision. Honey must be sold for what it is and we have no desire to sell it for anything else.

Several local farm bureau organizations have passed resolutions in favor of this bill, but as far as we can learn, no farmers' organization has endorsed it after fully understanding the nature of it. The Ohio Farm Bureau Federation specifically stated that they favored the use of corn sugar for every legitimate use **when properly labeled**. Several state federations have passed resolutions opposing the bill, as has the Grange in similar manner.

The American Bee Journal believes that the best argument is that no exception should be made in the pure food law in favor of any product and that to do so would call for numberless exceptions until the law breaks down entirely. No honest product can object to permitting the consumer to know what he buys, and that is all that the present law requires. If you have not already done so, write to your senator or to some member of this committee and express your views.

Things We Want To Know

There are still many questions relating to bee culture that the best informed authorities are unable to answer. Some of these are very important and may lead to far-reaching consequences when the information is available. The following suggestions to research workers offer a few questions relating to honey which should be answered:

1. What is the life-giving element in honey that makes such a remarkable difference in the development of the larva, which given freely results in a queen and when withheld brings forth a worker?

2. Of what value is this element in human food, and if given to children, does it affect their development in similar manner?

3. Since it is known that honey contains life-giving elements not present in ordinary sugars, is this element present in all grades of honey in similar degree, or does it vary in honey from different sources?

4. Is light and mild honey equal in health-giving properties to honey which is dark in color and strong in flavor?

5. To what extent should honey be prescribed to patients who are sick? With what diseases may it be eaten freely and with which ones should it be withheld?

6. Why is honey from the alfalfa plant in the higher elevations of the Rocky Mountain region light in color and mild in flavor, while honey from alfalfa in southern Arizona and California is dark and strong?

7. Is there any difference in the product under different environmental conditions other than in color and flavor?

It would be possible to extend such a list of questions to an indefinite length and provide problems for workers in several fields. It seems quite possible that some fundamental discoveries will one day put honey in the front page of every newspaper and create such a demand for our product that the present output will fill but a fraction of it. The most important thing now is to find out just what our product is and what it can be used for.

F. C. P.

Treatment of Foulbrood

In this issue we publish the first of two articles by Jay Smith on his new method of treating combs from colonies with American foulbrood. Mr. Smith's treatment seems to be a step in advance of the liquid bath in alcohol-formalin or water-formalin which has attracted so much attention in the recent past.

We would call attention, however, that any such treatment requires great care to insure success. The experienced beekeeper can save his combs by such methods and thus avoid losses through the destruction of equipment. However, the trend of the times among inspectors is to

burn diseased colonies and thus avoid all danger of spread of the disease. This is probably the safest and cheapest method for inspectors to pursue, since few inexperienced beekeepers would treat the disease by any method without overlooking some detail necessary to insure complete success.

In presenting Mr. Smith's discovery, we do so feeling that it will be useful to the man of experience who has a considerable investment at stake, and that any man who will give sufficient care can save his combs by this method. It should be of special value in treating extracting combs where there is but slight infection of disease present in large apiaries.

Spring Breeding

It is important to keep in mind the fact that the eggs laid by the queen today will hatch into worker bees in twenty-one days. Then it will be about two weeks more before those bees become regular field workers. They generally take a flight a week after birth, but remain in the hive another week before making regular trips to the field.

So it is thirty-five to thirty-six days from the time the egg is laid to the time when the worker bee can go and bring in her share of the crop. From that time on, the field bees are useful until the end of their average life, which is figured at thirty-five days.

Now, if we wish to have the best service from our colonies, we must see to it that the heavy laying of eggs begins some thirty-five days before the honey crop. It is therefore important that our beekeepers be well acquainted with the resources of their locality in honey. White clover, which is the main resource of the Middle West, is usually in full bloom two or three weeks after its first blossoms appear. Of course, if we could have colonies in full strength at the time of fruit bloom, in a good fruit country, we might harvest a crop from this source, but it is very rare to find a locality with so much fruit bloom that apiaries may get crops from it. Besides, it is too early for a very good chance for colonies to attain full strength so soon in the season.

But we must encourage our bees to breed in full time, so as to raise our bees, as our friend George Demuth has so well put it, "raise our bees for the crop and not upon the crop." Indeed, in too many cases bees are not looked after, are not encouraged to breed except by what nature provides, and they begin their heavy breeding when the honey crop begins, thus becoming strong only in time to get a few days of harvest at the end of the honey crop.

Disease Eradication In Michigan

Our readers' attention is called to the article in this issue by H. M. Krebs, State Bee Inspector for Michigan, on the disease eradication work in that state during 1927.

We must admire the wonderful cooperative effort of the beekeepers of Michigan, their Governor and state officials in meeting squarely the conditions, and breaking all precedents by allotting a sum which would alleviate such conditions in record time.

Nor can we help admiring the inspector for breaking into print with a report of conditions even though it showed such an unfavorably large percentage of disease infection in the territories covered. Nor can we doubt but that such measures will soon put Michigan in the same category of an ever increasing number of states whose percentage of infection is becoming negligible.

Unfortunately, we still have a number of unnecessarily black spots on the United States map, where no concerted effort is being made to provide legislation and funds for the situation as Michigan is so ably doing.

Another Apicultural Field Station

Through the interest and activity of Congressman Bolivar Kemp of Louisiana, an item has been included in the agricultural appropriation bill to establish a field station in the South for the study of problems relating to the breeding of bees, the rearing of queens and the shipping of bees in packages.

There is every reason to believe that the bill will pass and that within a few months the Department of Agriculture will have the task of getting the work under way.

We feel that this station will fill a real need for the shipping industry of the South and that there will be no lack of problems for the workers to consider. Our southern friends owe much to Congressman Kemp, for, without his assistance, no such provision would have been made at this session of Congress.

It is probable that two men will be needed to carry on the work of the station.

Who Is Average

All the current discussion about average farmers, average farm income and its comparison to averages in other fields is getting tiresome and ridiculous. The beekeeper with two or three neglected hives in the orchard is no more to be compared with N. E. Miller and his thousands of colonies than is a baby's go-cart to a high-powered automobile. To equalize the income of the two and call it average is no criterion as to what a man should be able to earn in the honey producing business. It is beginning to appear that much of this so-called agricultural relief is propaganda for the benefit of politicians and others who depend upon keeping up the agitation for the safety of their jobs.

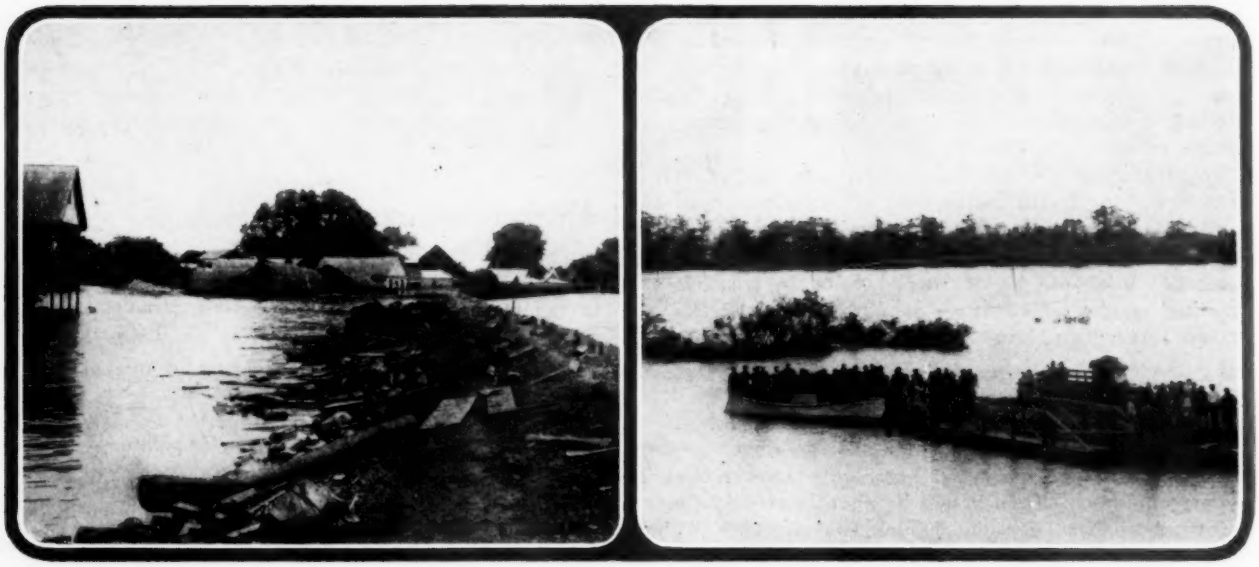
Most of the legislation proposed does not even pretend to apply to all branches of agriculture, but only to those particular branches which offer a large number of votes. The reaction following the boom left plenty of wreckage and there are few of us who were doing any business who did not get hurt. However, the damage is done and no amount of political salve will heal the wound. The man who has a good location and a good outfit, and is not too heavily handicapped by debt, can make some money now. If his location is poor or he is burdened by debt, there is nothing the government can do about it.

The greatest service that our lawmakers could render would be to hold a session devoted to the repeal of burdensome laws already passed, rather than adding to the confusion by making new ones. F. C. P.

Do We Need Bee Magazines?

This question is put to me by a beekeeper who has in his possession "The Honeybee" of Langstroth and Dadant, the "Cyclopedia A B C to X Y Z," the "Thousand Answers of Dr. Miller" and the book on "Queen Rearing" by Pellett.

Yes, even if you have all those works, there are many points on which you will be in doubt. Even with all the bee magazines, and the books, you will often come to a question that has not yet been solved and may not be solved for some time. It is only the man who does not realize how many inventions and discoveries have been made in the past forty years who doubts the necessity of keeping up with the times by taking a magazine of his industry. What we don't know yet would make a much larger book than all the books published put together



Flood scenes in the devastated country where bees, stock, men and houses were alike playthings of water

The Rehabilitation Program for Beekeeping in Louisiana

By Jes Dalton

WE are never ready for a catastrophe, for if we were it would not happen. Reconstruction work for beekeeping in Louisiana proved the rule.

Most readers are familiar with the disaster, but one cannot grasp its magnitude unless experienced personally, nor how fast one has to travel to keep pace with the rapidly changing current of events; from orderly construction men to a disorderly mob fleeing for life; then to go back and take up the thread of affairs and try to find something to tie to.

The water came through and played havoc on the morning of May 15. We gave up the levees the day before and many of them went out that day and night, but it was the fifteenth that the water rose so terribly. On this day I boarded a relief boat and volunteered for work all over the flooded area. Two weeks later, at Baton Rouge, I found Mr. W. E. Anderson anxious to salvage the bee equipment that was floating everywhere. We tried to get boats, and went to New Orleans for this purpose, where we found Dr. L. C. Spencer and Mr. H. Stevenson also interested in a reconstruction program. I do not think anyone planned the program we later followed. We hoped to get some boats and with volunteer workers pick up the floating equipment, and possibly get a few bees donated, and some supplies. But as we all became interested the program, like "Topsy," just grew.

It was soon apparent from the demoralized condition that even with equipment salvaged, no roads or communications were open into the flooded districts, and that everyone was too busy to take care of little driblets of bees and odd queens coming in. The railroads were all open into New Orleans and it was decided to locate



A levee yard. Up high and dry. Bees placed out in newly assembled equipment for later distribution.

a small camp there and receive and assemble the donated stuff, but if we had to pay freight or express charges, even on donated materials, we were swamped; for the whole proposition was one of charity, and this at a time when every branch of such institutions were taxed to the limit.

Owing to the persistence of such men as W. E. Anderson, State Entomologist, Harry D. Wilson, Commissioner of Agriculture, Dr. L. C. Spencer, and others, we secured a few boats, picked up much equipment, made a survey of the situation, and interested the Red Cross and express people to the extent that free transportation was pledged for all stuff coming into New Orleans for redistribution. Right off the bat the G. B. Lewis Company donated hundreds of hives, Dadant & Sons several hundred pounds of foundation, and the Root Company donated, with their New Orleans agent (Mr. Martiny), $600.00.

This made necessary the establishment of a camp and it had to be operated cheaply, as it was all a charity deal. New Orleans has a steady honeyflow and was selected for the camp, being a centralized point of railroad connection and far south in the state, where we could operate late in the season.

There was an immense lot of labor, not only receiving and installing these donations, but work trucking them to camp and assembling hives by the carload, filling them with frames, wiring those frames, and installing them with foundation, besides handling the commissary department for the laborers.

To install bees in the hives, to check them through to see which ones accepted the queens, which ones killed them, and to replace the lost queens; to install packages by the hundreds in one day, take care of queens on the same scale, was a worth while work. Mind you, it was the middle of May when the Des

Glaise levee went out, and after July 4 before ever a worker arrived in camp.

While this work was going on, there was a steady campaign with publications for "donations in kind," which was answered far beyond anyone's expectations. Besides the large donations previously mentioned (we expect to publish a list of all donors soon), came a stream of pound packages, hives of bees, nuclei, smokers, veils, sacks of beeswax, empty frames, hives, bunches of foundation, etc.; every conceivable thing used in a bee yard, from bee escapes to wax spur imbedders; all donated and all delivered to New Orleans, transportation free. It was astonishing.

With the outline of work above, it was apparent that we would need not only help for nailing up hives and frames, but expert queen breeders, to keep cells coming on and to help check up on the queens installed. Just at that time Mr. Charles W. Quinn, who had a reputation for breeding and who had done some experimenting for controlled mating, offered his services, and he and his grandson, Mr. Harry Laidlaw, Jr., both joined the camp. I wish space would permit me to describe some of the work in detail — how, after installing combless packages, we would have difficulty, in the warm climate, to keep them installed; of the long night trips into the interior after donated apiaries which were sometimes in old gums which had to be hauled in and transferred.

Other trips were made for hives half way across the state, which were bought cheaply; sometimes accompanied by W. E. Anderson in person, driving a truck all day and all night.

I think what I regret most of all is that we were not in more of a position to carry out experiments in research work. We had almost every opportunity that was ever presented



Jes Dalton, E. M. Anderson, and Dr. H. C. Spencer. A whole crowd of willing workers helped in the program, including these three.

to the beekeeping fraternity for problems and comparisons.

Besides his very efficient work for the reconstruction camp in rearing high type queens, Mr. Quinn also demonstrated his method of artificial fertilization of queens. A public demonstration of this was made at the Louisiana state meeting held in New Orleans during the early fall.

Although conditions under which this work was done were adverse, Mr. Quinn's technique and acquaintance with his subject favorably impressed those present.

A number of queens were impregnated at the meeting and distributed to those in attendance.

Caucasians, Carniolans, Italians and blacks, goldens and three-banded Italians, all sitting side by side in the same yards and with the same honeyflow. A one-frame nucleus and a two-story colony in the same row, almost every make of foundation to try out on practically any sized colony or nucleus, different types of packages, some with abundant ventilation and some with none, some days all delivering perfect bees and some days lots of dead ones.

One instance I wish to mention is an Ohio beekeeper shipping back hundreds of packages in second-hand cages. These had a can for feeder, with the bottom soldered onto the can, which bottom acted both as a fastener for the feed can and to shut in the bees. It was common for those to arrive with the can jarred loose from this fastener and rolling among the bees. I picked up a cage full of bees, eighteen hours after arrival, in perfect condition, with this bottom fastened on, **but no can either attached to the bottom nor loose in cage.** Some careless helper had, in his rush, just grabbed this piece of tin which was supposed to have a feed can attached to it, but did not, and shut up the bees and crated them.

They came from Ohio with not a



One of the rehabilitation apiaries put into shape for distribution of bees to those who lost out in the flood

particle of feed. Observing this, I put them aside, and after coming from Ohio without feed and sitting in camp one night, it was another twenty-four hours before they began to die.

Just why would this package come through without a particle of feed and in perfect condition, and others similarly shipped, but with plenty of feed, arrive dead? I learned enough to show me how little I really knew and to make me smile when I see positive statements made about how bees accept foundation, or what killed certain packages, or how much more easily one is installed than another. I will take positive statements with a grain of salt in the future.

One particular piece of work was the buying of a large box-hive apiary, shipping the bees to the reconstruction camp in packages, pressing out the honey, shipping it down for feed, and sending the wax to be made into foundation for use. This was the most complete job of working over a box-hive yard into everything modern that I know of, and using the same materials—everything except the old boxes.

While this work at the camp was going on, another, equally perplexing, was being worked out. This was the proportion of losses and just what should be the basis of redistribution. Fortunately, Louisiana had a registration law which had been in operation long enough to give the location and number of every apiary in the state. But the problems of replacement were perplexing. Should a man who had lost only half, and had salvaged much, be reimbursed equally with the one who had lost everything and had also salvaged considerable equipment? Or should both of those have the same rating as a man who had lost all and made not a particle of attempt to salvage anything? We eventually replaced on a 25 per cent basis of colonies lost, and with each hive replaced a full hive of frames and foundation ready for bees. This amounted to approximately three carloads, which were shipped over the state in small bunches free by the express companies or redistributed by truck from New Orleans.

I think many valuable things came out of the disaster. It taught beekeepers to work together. It advertised the industry wonderfully. Column articles appeared in the daily press and in magazines.

When distribution time came, it was an innovation to the express people that we needed an iced car to load bees. This may help in preventing packages from being placed near stoves and pipes in the future. All shipments went through in perfect condition, but the colonies that were iced had hardly a dead bee in them.

All materials issued were standard ten-frame equipment. This starting in again with all one type of hives, and with donated queens from the very best breeders, distributes foundation for better stock all over Louisiana. I think, from my experience, that the beekeepers, by their tight organization and close contact with state officials, were able to accomplish much more than any other branch of sufferers.

In closing, I wish to emphasize that anyone undertaking bee reconstruction work on a large scale should first make up his mind to the hardest and most provoking work that he ever encountered.

As for myself, when I finished this job I promptly moved to the highest hills I could find in the state.

American Railway Express Company Arranges to Handle Orders for Package Bees

A LETTER from A. V. Small, of Augusta, Kansas, dated March 13, gives the results of his attempt to arrange with the American Railway Express Company whereby northern men ordering package bees from the South can make payment for the bees in full to the **express agent at the time of placing the order.** The express agent at the shipping end would then turn the money over to the shipper at the time of shipping. Mr. Small also tried to arrange so that if the shipment was not made before a certain date, the express agent would return the money to the purchaser. In other words, the shipper of package bees would not have the money until he turned the bees over to the company.

Replying to this proposition, the American Railway Express Company advises that it has arrangements whereby such purchase orders can be handled, and gives the following procedure, as quoted:

"Instructions to agents of this company provide, in part, that orders to purchase may be forwarded from one office of the American Railway Express Company to another office of this company, through the Order and Commission Department.

"Order blank, form 853, must be used, every space filled out, and bear purchaser's signature.

"No letter or other matter must be enclosed with form 853, except money order or other form of payment.

"All orders must be enclosed in Order and Commission envelope, form 6025, and, on request of purchaser, orders may be telegraphed by agent, subject to rules for payment, without extra charges, except cost of telegram.

"Payment for goods ordered must be made:

(1) By deposit of probable purchase price with forwarding agent.

(2) By buying a money order for the purchase price, made payable to the company's agent at the point where purchase is to be made.

(3) If necessary, agent can direct that goods be sent C. O. D.

"From your letter, it would be inferred that it is customary for payment to be made in advance of shipment, and would suggest that the second means of payment would answer your purpose best.

"There should be quite an advantage to you and your association in buying your bees through this service rather than by the old method."

(We can see no criticism of the above procedure. The reliable shipper will be satisfied to get his money on delivery of the bees at the express office.

Undoubtedly there has been a tendency on the part of the smaller and more inexperienced shipper to "see the doughnut and not the hole"—to figure his production and his weather conditions as being ideal and to accept more orders than he can possibly fill except under abnormally good conditions, with the result that he is bound to disappoint some of his customers by very late shipments or by failing to ship altogether.

Bear in mind, however, that even the best of shippers are confronted by miserable weather conditions. A liberal interpretation should be put, therefore, on specified dates for shipment, to allow of some leeway for a bad spell of weather.

Although the plan will provide against a loss of money through failure to ship, still it does not guarantee shipment on the date specified. In other words, disappointment by cancellation of order may come just the same, although probably with less frequency than when remittance is made direct.

Without a doubt, a majority of purchasers will still prefer to order of the man in whom they have confidence and by remittance direct. Still, there will be many who may want to take advantage of the arrangements of the express company, and we must commend them for the promptness in which they have met the desires of the package buyers.—Editor.)

County Cooperation in Michigan's Inspection Work

By H. M. Krebs

AN apiary inspector's report is usually considered as rather dry reading, but I believe we have accomplished something in Michigan this year that will be of interest to beekeepers the country over.

We initiated a state-wide inspection campaign this past season and work was carried on in seventy counties of the state. There was only one county which we did not reach that needs inspection, and only one other county in which but little work was done. Only one of these last counties, however, has many bees, so our failure to thoroughly cover these counties is not quite as bad as though we had missed counties with a heavy bee population. Intensive work was carried on in all of the other counties where disease had existed on previous inspections and in thirty-five counties which had never received any inspection before. Several other counties were also worked intensively that had received but little inspection work previously.

This large amount of work was made possible by securing a special appropriation on June 27, 1927. Eight representatives of the Michigan Beekeepers' Association placed before the Commissioner of Agriculture, the Administrative Board, and the Governor, the necessity of this work being done at once if we were to be able to salvage anything out of what would soon be the wreck of the beekeeping industry in Michigan because of the disease situation. Due to the initiative taken by these men, a special appropriation of $28,300 was given for this emergency for the year beginning July 1, 1927. At the time the appropriation was passed, we had twenty men on our inspection force, and by the time the month of July was over we had a total of sixty-nine men in the field, who had been picked and trained during that length of time. From one to three men were placed in all of the different counties which had not already been inspected prior to that time. The number of men in a county was controlled by the bee population and the seriousness of the disease existing. Each man worked by himself so as to cover the most possible territory in the shortest length of time, as the appropriation was made with the understanding that a showing must be made in every county.

We are planning on a new system of carrying on the work during the season of 1928, but this has not definitely been decided upon at the present time, so I will not give that plan here, but will be glad to pass it on later if it is finally decided to follow this course.

Our law allows for the counties to appropriate money for the eradication of bee disease. Forty-seven counties were asked to appropriate for this purpose this past fall. Thirty-six of this number have cooperated in this respect and have appropriated a total of a little more than $11,000 for the summer of 1928. These appropriations range from $100 to $1,000 per county. These appropriations were granted with the understanding that the state was to at least cooperate with an equal amount or, if the special appropriation is again given by the state, by giving those counties more than an equal amount if it proves necessary to give these counties a complete and thorough inspection. The counties which did not appropriate will receive inspection provided the state gives a second emergency appropriation. A meeting is soon to be held in regard to this, and until after it is definitely known whether or not this will be obtained, our plans cannot be definitely given. Both the department and the beekeepers of the state are living in hopes the appropriation will be granted, however, for the reason, as all beekeepers know, the advantage we have gained during the past year would very soon be lost if the work were allowed to lapse even for a year.

A legal quarantine has been placed upon the entire state by counties for a period of ten years. This quarantine prohibits the moving of bees or used beekeeping equipment from another state into this state; from one county to another, or around within the county, without an inspection and a permit issued from this department.

In regard to bees and used equipment being brought into Michigan from other states, it is necessary that a report from the State Inspector of the state from which the bees are to come be shown. At this time a permit will be issued from this department allowing the bees to enter subject to inspection on arrival.

A new apiary inspection law was passed at the last legislative session. The chief change in this law over the old one was that it called for the burning of disease instead of treating, as heretofore. Due to this drastic change, treating was allowed until the season became so late that it would no longer be successful. All treating was then done away with and disease burned as soon as found by the inspector. All disease will be burned by the inspector this year as soon as found. No treating will be allowed either by the inspector or the owner. This is because of our experience under the old law. It has been proven to us conclusively that foulbrood cannot be eliminated in the space of a good many years in this way.

The following are the results of our inspection during 1927:

Number of colonies inspected	98,310
Number of yards inspected	12,106
Number of colonies of American foulbrood	14,838
Number of yards of American foulbrood	3,259
Number of colonies of cross combs	12,045
Number yards of cross combs	4,117
Number of colonies of American foulbrood burned by inspector	8,603
Number of colonies of American foulbrood treated by inspector	663
Number of colonies cross combs destroyed by inspector	2,223
Number of colonies cross combs transferred by inspector	1,001

Per cent of disease by colonies, 15.1; per cent of disease by yards, 26.9.

We are able from the results of this inspection to make a fairly accurate estimate of the number of beekeepers and colonies of bees, for the first time. The present estimate places the number of beekeepers as between 25,000 and 30,000 and the number of colonies approximately 300,000. This has been quite a surprise to the people of Michigan for the reason it was formerly thought there were between 10,000 and 12,000 beekeepers and about 125,000 colonies of bees. It is even possible that our estimate of this year will be found to be low after we have obtained complete inspection of the state.

Michigan now has twenty-three counties which are entirely free from foulbrood and cross combs. Besides this, there are twenty counties in which both disease and cross combs are practically eradicated. Practically all of the disease in these last counties is now segregated into small areas and in only a few yards. This is especially true of counties in the northern part of the state where work has been carried on previously. With but a few exceptions, all of the thirty-five counties that were inspected this year for the first time were found to be in exceedingly bad shape as far as disease is concerned. One of these counties ran as high as 51.1 per cent of the colonies and 76.2 per cent of the yards contaminated with American foulbrood. This does not compare very fa-

forably with some of our other counties which have been under inspection for two or more years. One of these last counties shows 0.4 per cent of the colonies diseased and 1.3 per cent of the yards. One other county, which was inspected in 1926 for the first time and was practically in as bad shape as the one mentioned before, shows 16.7 per cent of the colonies diseased and 24.7 per cent of the yards diseased the second year.

There are 1268 townships in our state, of which 958 are now under inspection. Of the remaining 310, there are very few which have not had at least a few yards inspected in each one.

It has been the policy of this department the past season to either remove or destroy all bees that are found in trees and buildings. It might be of interest to note here that of all of the bees removed from trees during the past season, even in badly infected areas, no disease was found. This does not hold true, however, in the case of houses and other buildings. Quite a number of colonies removed from houses, granaries, chicken coops and barns showed the presence of disease. The only explanation we can give of this is the fact that bees are much more apt to live over the winter in buildings than in trees, probably because of the warmth from the inside, which helps to keep up their cluster temperature.

It will also be seen from the above tabulation that cross comb colonies of bees still exist in Michigan and probably all other states where bees are kept. We are making an effort, however, to eradicate these along with the disease, and it is an outstanding fact that in the counties where complete inspection and eradication has been carried on, a cross comb colony of bees is rarely found.

Beekeepers who do not know how to take care of their bees until after being shown by the inspector the proper way to keep them rarely care to go back to the old method after seeing the advantages of keeping their bees right.

The cost of inspection per colony is increased slightly this year over last year, due probably to three fundamental reasons: First, the establishing of the quarantine, the cost of which has been included in the inspection costs; second, the picking out and training of fifty new men, which always costs extra before these men are ready to start regular inspection work by themselves; third, the fact that the inspector took the time to burn bees this year, little of which had been done in previous years. The cost per colony was 35½ cents as against 31 cents during 1926.

Young Bees for Queen-Rearing

By E. M. Cole

(A comment on "Young Bees Not Nurse Bees," by Jay Smith, page 80, February.)

A nucleus containing a breeding queen was becoming stronger than I liked. The queen and comb from which I expected to get young larvæ were taken from the hive, the nucleus removed and the queen and comb placed in a hive on the old stand. No bees were taken with this comb, as this new nucleus was intended to be populated by returning field bees.

The comb left with the queen was a little larger than my hand, was built from a starter and contained eggs expected to hatch next day.

The old nucleus was moved one-fourth of a mile away and returning old bees helped strengthen the new nucleus, which now contained the queen, a small comb with two-day-old eggs, the returning field bees and plenty of provisions, and was a fair sized nucleus.

The comb was examined the next day, but no eggs had hatched, and by the fourth day not more than a half dozen larvæ could be found, although most of these eggs were now six days old. Neither did the comb seem perceptibly larger.

On the fourth day, in the evening, a frame of brood covered with bees was taken from above an excluder and shaken in front of the nucleus, and most of the bees ran in.

The next day the eggs had hatched and comb was being built. So I still believe that young bees are necessary in rearing good queens.

It seems as probable that Mr. Smith's colony failed from a lack of bees old enough to secrete wax and start the cells, as that the bees were too young for nurse bees.

It may also have been the better for a good force of pollen, water and nectar carriers. Iowa.

Latest Honey Grades Defined in Circular 24-C

Rules adopted for grading honey, for the guidance of beekeepers in preparing their product for market and for convenience in buying and selling honey, are brought together in the latest revised form in Circular No. 24-C, "United States Grades, Color Standards and Packing Requirements for Honey, Recommended by the United States Department of Agriculture," just published. Distributed with this circular is a separate wall chart, which gives in tabular form for ready reference the requirements for the principal grades of honey, and also a leaflet giving information concerning the stamp authorized for use with all United States grades of honey, and the design for use on honey labels.

This circular is a revision of and supersedes Department Circular No. 410-C, published last May, and also includes the information in Department Circular No. 364-C, "The Color Grading of Honey," published in 1925. It is a manual in thirty-two pages of necessary information relative to honey grades and colors, packing requirements for home and export trade, and a complete explanation and definition of the grades which the United States Department of Agriculture recommends for the standardization of honey merchandising. It will be useful to producers of and dealers in honey. It may be procured by application to the Department of Agriculture, Washington, D. C., asking for Circular No. 24-C.

The Honey Poster

A recent communication from Washington advises us that the honey poster will sell at 15 cents per copy regardless of the number purchased. This is the actual cost of printing in large numbers.

Again we would urge every beekeeper to buy this poster and put it up in public places. It is attractive and carries confidence, since it is put out by a government agency.

Send all orders to the Superintendent of Documents, Government Printing Office, Washington, D. C. Money order or coin should be sent, since stamps or checks are not accepted.

Carr in Hospital

Our readers will be interested in the announcement that Elmer G. Carr has passed through a successful operation and is now well on the road to recovery. Mr. Carr is secretary of the New Jersey Beekeepers' Association and also chief bee inspector for that state.

Inspector in Accident

We have recently learned of injury to Mr. Charles N. Greene, of Harrisburg, Pa., chief inspector for Pennsylvania. Mr. Greene was injured in an automobile accident late in February. He is recovering satisfactorily.

Engle to North Dakota

C. S. Engle, a prominent Iowa beekeeper, formerly from Texas, has lately moved to North Dakota, where he will engage in honey production on an extensive scale.

Death of Bees from Spray Poisoning Not Yet Sufficiently Proven

By V. G. Milum, Apiculturist, University of Illinois

THE following facts are not assumed to be conclusive upon the subject above stated, but are given until further investigation may give more definite information

Sample 1—University Apiary Urbana, Illinois

On May 11, 1927, bees were observed crawling in front of many hives; some were writhing, some motionless. Such bees were more numerous in front of one particular group of hives. These were mostly comparatively young bees. There was some tugging of bees at entrance. The weather was rather cool and had been intermittently so during the entire spring. No fruit bloom was prevalent on that date, although the petal-drop spray had probably been applied to some extent from about May 6 and later in the University orchard, the nearest point of which to the apiary was one mile distant. Ten of these bees, when placed on top of a warm packing case, eventually took wing and flew away, but several dropped to the ground before passing from sight. The bees seemed unable to discharge their feces, which was of a rather abnormal yellow color. When the abdomen was pressed, the body wall in some cases broke instead of the feces being discharged through the anus, which appeared to be held abnormally tight.

A sample of these bees was gathered and turned over to the Chemistry Department for an arsenical determination. (Also Koehler Sample No. 2.) The report was as follows:

"Arsenic determined by Gutzeit method running blank—using 10 grams of bees; showed the presence of .000001 grams of arsenate, or about one 100,000 %."

Unfortunately, the writer failed to count the number of bees in the sample, but from all subsequent weighings of bees under similar conditions and reports of investigations on arsenical poisoning of bees, the average weight of the dead bees was assumed to be about 0.1 gram. This would mean about 100 bees in the 10-gram sample.

According to the U. S. D. A. Bulletin 1364, Effects on Honeybees of Spraying Fruit Trees with Arsenicals, "laboratory experiments established the minimum fatal dosage of arsenic (As) per bee to be about 0.0004 or 0.0005 milligram." According to Bulletin 247, Purdue University, "A very small amount of arsenic (less than 0.0000005 grams arsenate (.0005 milligrams) is a fatal dose for a bee."

Using this information as a guide, there was apparently sufficient arsenic in the 10-gram sample of bees (.0001 milligrams) to actually kill two of the entire lot of 100 bees. Until someone demonstrates that a smaller dosage than .0004 to .0005 milligrams of arsenic is the minimum fatal dosage, we must admit that arsenic was not the cause of the death of all of the bees. In fact, the writer did not think that the bees acted similar to those with spray poisoning.

Sample No. 2—Apiary of Hyde Brothers, New Canton, Ill.

This sample was supplied to us by Mr. Flint, Chief Entomologist, State Natural History Survey, who in turn received it from W. H. Koeller of New Canton, Illinois, who mailed it April 25. These bees were apparently found in front of hives in one of the apiaries of Hyde Brothers of New Canton. The owner and other beekeepers were sure that the bees were killed by spray poisoning which was applied on Friday and Saturday, April 15-16, while it is reported that the orchard was in full bloom on Easter Sunday, April 17. The orchardist apparently thought he had taken due precautions and did not believe that spray poisoning was the cause of such excessive losses as reported by observers. Mr. Hyde reported later that at this time no healthy unsealed brood could be found in any of the hives, much of it being dried up.

According to beekeepers who visited the above apiary on May 16, a month after the spray was applied, the bees were still dying. They could find no other cause for the death of the bees, and hence concluded that apparently the spray poisoning was responsible. According to Mr. Hyde, the brood was not infected at this later date, being apparently healthy brood.

When the sample of bees was received by the writer, they were somewhat decayed. A few days later they were submitted to the University Chemical Department for an arsenical determination and the following report was submitted:

"Arsenic determined by Gutzeit method running blank — using 9 grams of bees (Koehler No. 2)— showed the presence of less than .000001 grams (.001 milligrams) of arsenate."

No count was made of the number of bees, but it was probably between 90 and 100 bees, or more. According to the chemical report, there was sufficient arsenic in the sample to kill two of the entire lot of 90 or more bees. Hence, we cannot assume that the bees of the sample submitted were killed by arsenical poisoning on the basis of present information.

Sample 3—Rasmussen Apiary

On May 5, 1927, Mr. George E. King, assistant apiculturist at the University of Illinois, reported that three of four colonies in the apiary of George Rasmussen were seriously infected with a disease with symptoms similar to those of the university apiary. This apiary was located a short distance from Mr. Dunlap's orchard south of Urbana-Champaign. Another colony belonging to the orchard foreman, situated at another point nearby, was also seriously infected. Spraying of apple trees after the petals had dropped was in progress at that time at a point over one-half mile distant from the bees. Mr. King and Mr. Rasmussen reported that the bees were all dying within a few feet of the hives. Two of the three colonies were later reported as being depleted of bees. No dead brood was found in the hives until the two colonies were nearly dead. Both Mr. King and Mr. Rasmussen doubted that spray poisoning was the cause of the death of the bees in this case, although the bees in another apiary of Mr. Rasmussen at a more distant point did not suffer as did the ones cited here.

It may have been possible that the bees had gathered the spray poisoning as a water supply following one of the frequent cold periods, as bees very often gather water from leaves, blades of grass, etc., immediately after a prolonged cold period. No chemical examination was made of these bees.

Sample 4—University Apiary

As the diseased and crawling condition was still present in the University apiary on May 19, 1927, a sample of the sick bees was gathered, placed in a queen mailing cage and sent to the Bee Culture Laboratory at Washington, D. C. Sample No. 5 was also sent to the government laboratory at the same time. Mr. James I. Hambleton, Chief Apiarist of the Bee Culture Laboratory, reported on those samples as follows:

"The two samples of adult bees which you sent for examination on

May 20 are our Sample Nos. 13582 (University Apiary Sample No. 4) and 13583 (Kidd Apiary, Sample No. 5). We examined both samples, but found nothing particularly abnormal with the exception that the alimentary tract contained several species of pollen which occur rather infrequently, so far as we can judge from the examination of the samples which are sent to us."

Sample 5—Jesse Kidd Apiary

This sample was supplied us by Jesse Kidd, Rural Route 1, Champaign, Illinois, about May 19. Symptoms of disease exhibited by these bees were similar to those of the diseased bees in the University apiary as observed by Mr. Kidd in both cases. He did not believe spray poisoning was the cause, since he knew of no spraying within more than three and three-fourths miles of his apiary site. He reported bees crawling about hives up to 15 or 20 feet away. This sample of sick bees was mailed to the Bee Culture Laboratory at Washington, D. C., with the resulting report as given under the discussion of Sample No. 4.

Summary and Conclusion

Before passing final judgment on the case of spray poisoning vs. the bees, it is apparent that further investigation is needed. However, the writer will venture to express the opinion that spray poisoning was not the sole cause of the death of all of the bees in the spring of 1927, as herewith reported. The symptoms as reported in most of these cases seem to be about the same—i. e., sick, dying, and dead bees within a few feet of the hives, which bees seemed unable to fly and apparently had a clogged intestinal tract which prevented the discharge of feces. Chemical analysis of two samples failed to show sufficient arsenic to kill the bees, based upon our present information of the minimum fatal dosage as reported in government and experiment station bulletins. Furthermore, in cases of immediate arsenical spray poisoning, our experience is that dead bees may be found at various distances between the orchard and the apiary, whereas in these cases all dead bees were apparently near or within a few feet of the hives. If arsenical poisoning from honey previously stored in the hives was the cause of the sick bees, then we would expect to find dead and dying brood within the infested hives; yet our observations disclosed no abnormal brood and none was reported among the observers cited here, except in the case of the Hyde Brothers' apiary immediately following the spraying period.

On the basis of the facts presented here, can we be sure that the bees in any of these cases were killed by arsenical spray poisoning, with the possible exception of the bees in the Hyde Brothers' apiary, at the earlier date? To establish such a verdict, certainly more information is required, especially as to the minimum fatal dosage of arsenic.

The writer feels sure that the cases of sick bees in the vicinity of Urbana-Champaign were not due to spray poisoning, but he regrets that he can advance no other definite cause for the deaths. But does that prove arsenical sprays guilty? We need more proof. Further investigation will be attempted in 1928 if the conditions or disease as described here are prevalent. It may be that the cause is a disease that has been positively studied with which the writer is not familiar.

(We have had the same conditions in bees, in April-May, at a time when there was no such thing as spraying fruit trees with any posion whatever. The real cause, in our opinion, is still to be found.—Editor.)

Sainfoin for Bees

By C. P. Dadant

The following letter is from a California reader: In your issue of April, 1926, you mentioned having received sixty pounds of sainfoin seed from France.

Have you had any reports of any results from the plantings? What is the nature of growth? What grade of honey is produced therefrom? In what portion of France does it grow? Does it require moisture and will it thrive in waste lands such as roadsides, fences, ditch banks, etc? In short, do you think it would thrive in the central California delta lands?

What we need in this section is flora during the period April 20 to June 1.

Thanking you in advance, I am,
Thomas S. Davis.

Sainfoin is very similar to alfalfa, but probably stands drouth better than the latter. Here is what Bonnier, in his "Flore Complete," says of this plant:

"The forms that one can group under this name, 'Onobrychis sativa,' are found in uncultivated or rocky spots, in the mountain prairies, on arid hills, and the principal one of these plants, known under the name of 'sainfoin,' is cultivated on a large scale for fodder; grows in varied soils on dry, clay, unfertile lands, but suffers from excessive moisture. It is cultivated in Europe up to the sixty-seventh degree of latitude; does not grow in Brittany."

We have not received any favorable comments that I remember concerning the results obtained from the seeds furnished to our beekeepers. Perhaps this statement will cause some to be sent us, and we will publish them.

We do not believe that sainfoin can be depended upon to grow in waste places as does melilot, for we do not believe it to be as hardy a plant as melilot.

Sainfoin grows in France, mainly in the locality known as "Gatinais," in the center of the country, but, as stated by Bonnier, it grows more or less in the entire country, with the exception of Brittany.

An appreciation of sainfoin by myself may be found in Pellett's "American Honey Plants," page 303, copied from the American Bee Journal of November 4, 1904, page 790. It is as follows:

"Sainfoin, otherwise called esparcet, is widely cultivated in Europe, especially in France. Its name, 'sainfoin,' is French, and literally means 'healthy hay' — sain-foin. It is a perennial, gives a splendid hay crop, and in some sections of the European continent it is a first-class honey producer.

"The small province of France, formerly called 'Gatinais,' is the leading producer of sainfoin honey. According to the best authorities, the honey of Gatinais has the reputation of being of the whitest color and sweetest taste, and is said to be in no way surpassed by white clover honey.

"Gaston Bonnier, the eminent professor, who was president of the International Congress of Beekeepers at Paris in 1900, says in his book, the 'Cours Complet d'Apiculture,' that sainfoin honey is one of the best appreciated grades. He ranks it next only to the honey of the Alpine hills of eastern France and Switzerland.

"From immemorial times the honey crops of Gatinais have been considered as leading in the amount of production, and this was all credited to the sainfoin, which is grown there in immense quantities, somewhat as alfalfa is grown in the irrigated plains of the West. It was in Gatinais that the custom of inverting hives began in order to secure the largest possible quantity of honey from the bees, regardless of future consequences. For that reason the beekeepers of Gatinais were compelled to replenish apiaries every season with bees brought from away, as their only aim was to secure the largest possible quantity of sainfoin honey during the short period of the bloom, and many of their bees perished the following winter.

"Although sainfoin has already been tried in the United States with

unfavorable results, I believe it is worth while to try it again, especially in the countries where alfalfa succeeds so well. It might prove a useful honey plant.

"We must, however, not close our eyes to the fact that honey plants do not yield in the same proportion in all localities. White clover, which is the source of so large a crop of white honey in this country, is absolutely useless as a honey producer in some other countries. Edouard Bertrand, the editor of the Revue Internationale, told me positively that there never had been any white clover honey harvested in Switzerland by any of his friends, although white clover is quite common in the Swiss meadows."

A New Work on Bee Diseases

"Maladies des Abeilles" (Diseases of the Bees), by Ph. J. Baldensperger, of Nice, is on our desk. Mr. Baldensperger is probably the best linguist among beekeepers, for he speaks, in addition to his French mother tongue, the main languages of the world, English, German, Italian, Arabic, and the language of the Hebrews of the Holy Land.

The book, of 114 pages, gives probably the most lengthy history of bee diseases extant, as it goes back to the early days of beekeeping in Greece, Egypt and Rome, to show us what they knew of bee diseases. He reminds us that the famous "Bacillus larvæ" of White was shortly afterwards discovered by Maassen in Germany and named "Bacillus brandenburgiensis," and by Burri, in Berne, and called by Cowan "Bacillus burrii." But the original name of Bacillus larvæ is so much more appropriate that the other two names are set aside.

Instead of calling the two foulbroods "American" and "European," which are misnomers, he calls the Bacillus larvæ the "gluant" (gluey, ropy), and the Bacillus pluton "puant" (stinking), since the so-called European is nearly always accompanied by the Bacillus alvei, which causes the odor of carrion in the dead brood.

Although this work does not contain anything new, it gathers together much of the information the world has on the diseases and enemies of bees. Mr. Baldensperger had a protracted experience with brood diseases in southern France, since 1908.

Very Nice, Mr. Ellams

We are beginners and have had success far beyond that achieved by old beekeepers. Much of our success may be traced to reading your valuable paper.

We harvested 818 pounds of first quality, pure white honey off three packages, each weighing two pounds, in 1927. We did not have a single swarm. I would be glad of the name of others who had like success.

Elgin A. Ellams, Manitoba.

Death of Hardesty of Ogle County (Ill.) Association

We regret to announce the death of William T. Hardesty, at Oregon, Illinois. Mr. Hardesty was a pioneer Illinois beekeeper and has been secretary of the Ogle County Beekeepers' Association for some time.

Twenty-Three Vocations Represented in Indiana Beekeepers' Short Course



As Associate Editor, it has been my pleasure, for the past few years, to assist those in charge of the beekeeping work at various of our state schools and colleges. So there is some background to my words when I state that the short course at Perdue University, February 20-22, was the best we have ever attended.

Of course, "best" is entitled to some clarifying. There were forty-seven registered students, but over seventy-five (by count) in actual attendance. Most of them were there for the first time to find ways and means of better beekeeping.

According to the registration cards, there were twenty-three vocations represented, with farmers, fruit men, teachers, and merchants in the lead.

Things are moving in Indiana. Next month we hope to have a full account of our impressions of beekeeping in that state.—G. H. Cale.

A Safe and Easy Method of Moving Bees

By Natt Noyes Dodge

RARE is the case of the beekeeper who has not or will not at some time during his career be called upon to move his bees a considerable distance. Perhaps he has bought out another bee man a few miles away and desires to remove the bees and equipment to his home yard, or he may be so located that every spring he must transport his colonies to an outside location in order to take advantage of nectar-producing flowers, and every fall bring them home again to the care and protection of the farmyard.

Not long ago the writer had the good fortune to listen to some of the varied experiences of a veteran beekeeper, a man who has been engaged in commercial honey production for nearly a quarter of a century. Among his many tales was one regarding his first attempt to move a hundred colonies of bees. Although experienced in beekeeping, this was one phase of the work with which he was not familiar. Of the one hundred colonies moved, eighty-five were smothered outright with many of the combs melted and broken down.

"It was the worst mess you ever saw," said the beekeeper, "and I lost not only the bees and a mighty fine lot of brood combs, but, since it was spring and I was moving into a nectar location, I also lost an entire crop of honey. This experience, I figure, cost me about $1250, but it taught me a lesson, and since then I have never lost a colony of bees when moving."

There are several methods employed in moving bees, depending upon the distance to be covered, the season of the year, and the preference of the beekeeper. The one to be described has been used by the writer on numerous occasions, and recommends itself on account of the ease with which the colonies are prepared for moving, and the low rate of mortality resulting. There are so many things that may happen to cause the loss or injury of one or more colonies en route that it is difficult to guard against them all, but through a knowledge of the common causes of disaster and by taking precaution against these, the liabilities of a mishap are reduced to a minimum.

Loss of bees while moving is usually due to suffocation. Angered and aroused by the jolting of their hive, the bees rush toward any openings and try to push out. If the entrance is covered with screen, the front row of bees is crowded up against it by the frantic efforts of those behind, who in turn are squeezed against those in front by the numbers behind them. It is not long before the entire opening is blocked by a tightly wedged, struggling mass of bees. The excitement and agitation cause the hive temperature to rise rapidly, and with ventilation shut off by the jam at the entrance it is little wonder that the melting temperature of beeswax (145 degrees F.) is reached, particularly if the weather be warm. When the wax begins to soften, the

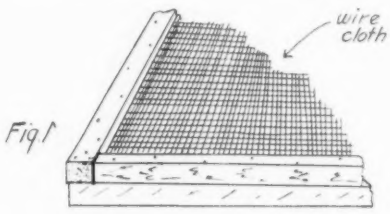


Fig 1

motion of the vehicle, aided by the weight of the honey and bees, soon loosens the combs from the top bars, and liquid honey running over the combs and bottom board finishes any bees that have not already been smothered.

Escaping bees, although not lost, because they usually cluster on the hive from which they have come, form an unpleasant sidelight to moving, and are not relished by the beekeeper. Usually they are not in the

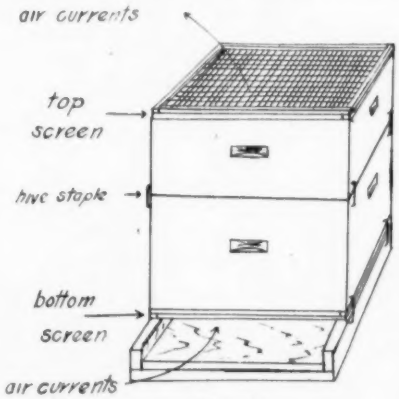


Fig. 2

best of temper and cause the bee man no little annoyance, especially while he is loading and unloading.

Where bees are moved frequently, it will be found well worth while to provide a small amount of equipment to be used at this time. The making of a set of substantial screens, two for each hive, will not prove excessively expensive. The screens are made the size of the top of a hive body—that is, the same size as an inner cover, bee escape board, or queen excluder, and for whatever size the beekeeper uses. This is an argument for having hives all of the same size, as the screens will then be interchangeable. If there are several sizes of hives used, screens to fit each will be necessary. Common black wire cloth serves the purpose as well as anything and may be purchased in rolls. A convenient width of screen is just the length of the hive body. For the frame of the screen, wooden strips the dimension of bottom bars are used. These are cut in lengths approximately five-eighths of an inch less than the outside length and width of the hive body. Nailed together with the ends lapped (Figure 1), and the screen stretched tightly between, very strong and sturdy screens will result. When not used in moving, these screens are useful in uniting colonies, permitting the placing of a nucleus above a strong colony to take advantage of the heat, keeping robber bees out of stacked-up supers when the honey is being taken off, and for any other purposes of which the ingenious beekeeper may think.

In moving they are used as follows: At any convenient time, preferably while the bees are busy in the field, the beekeeper takes the screens to the yard. The cover is removed from each hive and a screen placed on top. (Photo No. 1.) A nail (a 1¼-inch frame nail does very well) at each corner fastens the screen to the top of the hive. If the colony is very strong, the distance of moving great, or the weather excessively hot, it is advisable to place an empty shallow or comb honey super on top of the hive and fasten the screen on top of this. The space thus afforded serves as a clustering chamber for the bees and is additional security against smothering. At this time, too, the hives and supers are fastened together with hive staples or a strip of lath at each corner, and are examined for "leaks"—holes or cracks where bees might escape. The covers are placed on top of the screens to protect the bees from the sun or from any shower which might come up before moving time.

As soon as the bees are all in from the field in the evening, the beekeeper again goes to the yard, taking the remaining screens and an extra bottom board. Placing the bottom board beside a hive, he lays a screen on top of it. (Photo 2.) Then he lifts the hive from its bottom and sets it on the screen. (Photo 3.) Any bees on the uncovered bottom



No. 1. Cover removed and screen placed on top

board are shaken in front of the weakest colony, which is the last one to be closed up. This bottom board is moved over to the next colony, a screen laid upon it, and the hive lifted off its bottom and placed on the screen. And so on down the line. After all hives have thus been effectively closed, the beekeeper staples the bottom boards tightly to the hives, the staples spanning the lower screen. The covers are then removed and everything is in readiness to be loaded. (Figure 2 and photo 4.)



No. 2. Place first screen on bottom board

In arranging the hives on the truck it is advisable to place them with the entrances toward the sides of the vehicle. This is to prevent the swinging of the combs, which would otherwise (if the axis of the combs were parallel to the direction in which the truck was moving) be brought about by the swaying of the truckload. After the first tier of hives is in place, two-by-fours are laid across the top for the second tier to rest upon. This permits free circulation of air between tiers. It is preferable to move bees at night, but if this is impossible, a shade should be rigged up to prevent the sun from glaring down upon the exposed top tier. Sprinkling with water from time to time will help the bees weather the trip. Of course, the load should be lashed firmly in place.

Upon arriving at the new location, the hives are unloaded and placed beside their permanent locations. After removing the staples which hold the bottoms in place, the beekeeper should let the hives stand for a while to allow the bees to quiet down, but this precaution is not necessary if immediate finishing of the job is desired. An extra bottom board is placed beside a hive, and the hive lifted gently off of the screen and bottom and set upon the new bottom on the permanent location. Any bees upon the screen are shaken in front of the hive, and the bottom board thus freed is used for the next hive, and so on until all bottom screens have been removed. The bees are now at liberty and are soon flying about, getting their new location. The covers are placed on top of the top screens, which may be removed at the time the staples fastening supers and bodies together are pulled out. If many colonies are to be moved, it is only necessary to have as many screens as are needed for the hives taken at each trip, for the screens may be removed as soon as the bees are unloaded, the nails pulled out, and the screens taken back and used on the hives hauled out on the second trip.

The advantages of this system of moving are triple, and far outweigh the initial cost of the screens. Since, through their use, the entire top and bottom of the hive is open to the air, it is practically impossible for the bees to choke off ventilation. Air circulation is direct and prevents any chance of overheating and suffocation. Warped covers and cracked and knot-holed bottoms play no part in the moving, hence danger from bees "leaking" out is insignificant. The ease and saving in time in preparing the hives for moving and in restoring normal conditions after they are in the new yard removes



No. 3. Place hive on bottomboard screen



No. 4. All screened and ready to go

much of the hard labor of shifting bees from one place to another, and, in the case of the beekeeper who must take his honey gatherers to the place where the flowers grow in abundance, takes away the semi-annual dread with which he undertakes this important task.

Washington.

A Device for Ventilating Hives

By John T. Coolidge, Jr.

I AM absent from my bees for two months in midsummer, and to avoid swarms caused by overheating, when I cannot be on hand to block up the hives, I am experimenting with a device designed to open the hives on hot days in my absence.

I describe this with reservations, because I am a beginner with bees and have only used the device for one season.

A three-inch hole was cut in a wooden hive cover and fitted with a metal flange. A cap for this hole was made of a friction cover of a paint tin and fastened to a wire beam, pivoted like the thermostat beam of an incubator. All parts were made of materials found on the premises, except an incubator wafer, which can be bought for 40 cents. A screw in a threaded hole in the beam rests on the wafer, and its adjustment determines the temperature at which the cap will lift off. The cap is boxed in as the diagram shows, to prevent wind from rattling it.

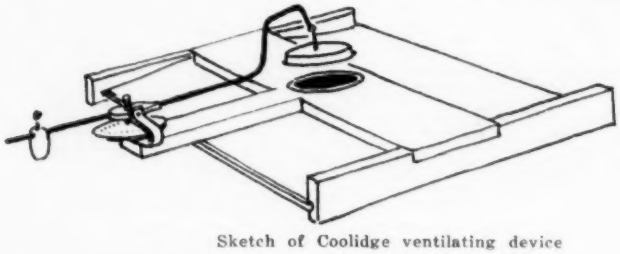
Because I am not on hand to hive the swarms, I take what precautions I can against swarming, and the hives are shaded by a small shed roof, which also prevents light and rain from getting in the hole. Also, to keep the interior dark, the bottom of the cap and inside of the box around the cap are painted black. Before this was done, the bees left a vacant place in the combs under the hole.

The entrance of the hive was watched on hot days to see at what point the bees begin fanning. At that point the cap is made to lift and the bees usually stop fanning after the cap lifts.

The thermostat worked properly throughout the season, there was no swarm, and the cap did not get glued shut by the bees, as I feared it might.

Further experiment with numbers of hives will be necessary to find how much it influences swarming and whether there is enough reduction in swarming to warrant the initial trouble.

Massachusetts.



Sketch of Coolidge ventilating device

Usefulness of the Waxmoth

Mr. S. Metalnikov, of the Pasteur Institute, Paris, has just published a bulletin entitled "The microbial infection and immunity of the mite of bees, Galleria Mellonella" (L'infection microbienne et l'immunite chez la mite des abeilles).

According to this savant, the waxmoth possesses the power to digest the bacilli of tuberculosis as it digests beeswax, which cannot serve as food to any other being. Mr. Metalnikov examines these curious facts from the medical point of view, and his study raises extremely interesting problems for biologists and physicians.

One of these problems also interests the beekeepers: If the waxmoth is capable of digesting the Bacillus Koch, it is quite probable that it may also digest the Bacillus larvæ. And this would be its "raison d'etre." The colonies of bees in a state of nature are necessarily more exposed to the dangers of moths than those established in modern hives. The owners of straw skeps know that larvæ of waxmoths may nearly always be found between the hive alighting board and the straw of the skep. It is still easier for worms to locate within the rotten wood of a hollow tree. Thus when a colony in wild condition is attacked by foulbrood and becomes weak, the waxmoths may take possession of the combs as fast as they are abandoned by the bees, so that when the last of the workers disappear that which remains of their combs is soon riddled with moths. The microbes and their spores being destroyed by digestion, the dead colony ceases being a seat of infection.

When we think this over, it seems likely that things may happen in this way. Thus, though it may appear strange, the role of the waxmoth, in nature, may well be to prevent the disappearance of the honeybee.—J. Magnenat in Bulletin of the Romande Society.

What Is a Drone?

By E. F. Hemming

"What is a Drone?" was a question put to a class of intelligent children. The answers varied. One child remarked that it was a noise made by an airplane; another that it was the cry of a bluebottle; another remarked that a drone was what came from a threshing engine when it was working; one child said a drone was a man who wouldn't work when he had the chance; still another thought a drone to be a noise in the wind made through the keyhole. A few of the children, keen to notice the capital "D" and its implication as a noun, wrote: "A Drone is a male bee." One went astray by remarking that a drone was a bumblebee, while one child only, evidently pedantically inclined, wrote as answer: "A Drone is a bee of the masculine gender and a lazy fellow who lives on others' labors."

Quite a good number of grown-ups would give an answer similar to the last, though perhaps not in the same wording. Yet, to be just to the insect world, we must recognize that a drone is what nature intended him to be. We may call him names, make fun of him, hold him up to ridicule, but we cannot alter the fact of his make-up. Could we get inside a drone and feel intensely anxious to get busy and help our sisters, we should be painfully conscious that we could as easily go out gathering nectar and pollen, secrete wax and fashion cells as a blind man could drive a taxicab through the streets of London. In fact, the analogy breaks down in favor of the blind man. He, with someone to guide him, could steer right or left, change gears, manipulate the accelerator, declutch, use the brakes, and at the end pocket the fare. But a drone, poor creature, cannot do any of the wonderful things a worker bee does, because he is not competent to fulfill any of those functions. He cannot even sting when he has just cause to be angry.

For what purpose, then, do bees rear so many drones in a season? Some people argue that they are necessary to maintain the temperature of the hive while the workers are out foraging. There is something to this argument, but not much. We all know that drones are raised in quantities when the duties

of maintaining a temperature are least necessary, and, when drones are reared under the impetus of an early spring, it only needs a couple of cold May-days to see the bees expelling some of the drones so recently brought to life. This partly disproves the idea of their necessity to maintain a temperature of 98 degrees. Another argument is that bees work to a rhythm, and the presence of drones assists them in their rhythmic exercises, and the ceaseless droning is very helpful and soothing to the worker bees. Now I do not like to pooh-pooh any conclusion arrived at by some brother beekeeper, and I will not hold this argument up to ridicule, but I must say that, when one opens up a hive, one does not observe drones to be busy using their musical powers to add melody to the proceedings. They always strike one as being rather cumbersome creatures who seem to be almost apologizing for their presence in such a center of industry. Poor, yet beautiful creatures, what shall we say of you?—British Bee Journal, Dec. 22, 1927.

Formalin or Formaldehyde

By Charles F. Lengeman

In the Editor's Answers of the American Bee Journal, page 82 of the January, 1928, issue, he advises the use of formalin for treating combs for American foulbrood.

Early last summer I had my first experience with American foulbrood. I treated the bees according to the rules laid down in the University of California, College of Agriculture, Agricultural Experiment Station, Berkeley, California, Circular No. 307, which anyone may have free for the asking, excepting that I brushed off instead of shaking the bees from the combs, but that is not the subject matter that I am trying to emphasize.

Like most beekeepers, I was anxious to save my combs, so had a galvanized square tank made of No. 26 iron, the size of which was 20x20 and 30 inches tall, and holds forty-five brood combs at a time; had two nibs ½x1 inch soldered on two opposite sides very close to the inside top of tank, under which I could fasten common pieces of lath to prevent the combs from floating when the tank was filled with the solution.

Now here is the important thing: When I went to my wholesale druggist and told him that I needed nine gallons of formalin, and what it was for, he said, "Why buy formalin at 85 cents per pound when you can get it under its common name of formaldehyde for 18 cents per pound?"

I spoke to Mr. G. H. Vansell on this matter during the Honey Producers' convention here last month, and he deplored the fact that he had not explained the mere difference of names in these two drugs when he wrote Circular No. 307.

I used one hundred of the formaldehyde treated combs last July to make nuclei with, and every one of them is absolutely free from any sign of disease and doing splendidly today on eucalyptus bloom.

I would therefore say, get Circular No. 307, follow it closely, but buy formaldehyde instead of formalin.

In having a tank made, the cover should fit reasonably tight over the top and have a hose bib at the bottom, so that the solution can be drained into a barrel. California.

Honey In England

Mr. John Protheroe is quite wrong in the figures he gives, page 620 of December. White clover sections of first grade are selling at 60 to 72 cents retail in the high-class London shops and stores.

Foreign sections sell as high as 48 to 54 cents retail. Best Scottish heather sections have sold at extraordinarily high prices, and some have, I believe, been exported to the United States.

It should be remembered, however, that heather honey is not to be classed with other honey. It is a special product of which there is never half enough to supply the demand, and, therefore, like all scarce things, commands a price beyond its actual value.

It is a fact here, just as with you, that light honey usually sells better than dark, and makes accordingly more money. Very dark honey, even of fine flavor, aroma and density, is difficult to place at remunerative prices.

A color liked very much in this country is what you term, I believe, "amber." In my locality, very little white honey is seen. It is mostly a rich golden-yellow. This is the color of sainfoin honey, which is, contrary to some of your American books, quite distinct from white clover honey. It is, in fact, quite sharply distinct from any other, and as comb honey is unsurpassed, as many think.

There is ,in my opinion, nothing so beautiful in honey as a well-finished sainfoin section with its golden-yellow honey and its pale straw-colored cappings. The latter peculiarity will always enable anyone to detect sainfoin honey in the comb at a glance.

Some of the American honeys being sold here have a flavor which seems peculiar to us, and I think it is that of sweet clover.

R. B. Manley.

Killion's Scotch Wife Will Make Him a Star Beekeeper of Southern Illinois



Carl Killion really lives just over in Indiana out of Paris, Illinois, and, by his own admission, he thanks a Scotch wife for the fact that he is rapidly becoming a dyed-in-the-wool beekeeper. This is no crack at Carl. He can't run up skyscrapers like those Modified Dadants up yonder (Modified bodies as supers, too,) without taking off enough honey at least to make a comfortable showing.

Carl reports that the big bodies, used as supers, average over 124 pounds each, which in my figure book makes 500 total for the colony in the picture.

Such crops this year were shared by a good many beekeepers in the clover region, but I suspect Carl can run up a good second to it most years. (By the way, I haven't met the Scotch lady yet, but she needs Carl to lift those supers.)

BEE PARADISE

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Denver, Colo.

THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

FEEDING, TRANSFERRING

1. How shall I feed honey in the spring? It is a trifle dirty, extracted honey. Must I dilute it before I put it into a Boardman feeder?

2. I live in Cerro Gordo county, Iowa. What time of the spring should I have my package bees come? Where should I get them?

3. I have an old grocery box hive. When is it safe to drum the bees out into a modern hive? After drumming them out, how long should I leave the modern box on top of the old? As long as the old box is beneath, should the bees have freedom to go in and out of the old hive?

4. Can I put on for surplus both supers for comb and extracting, or is it better to use one kind?

5. Is it advisable to loosen the frames in the brood chamber when there is excessive burr comb?

6. At what time should I remove the winter casing in order to begin to feed them, since the winter cases prevent feeding?

7. How may I discover a queenless colony?

IOWA.

Answer.—It is not necessary to dflute the honey, but if it is thick and yet not granulated, you might heat it before putting it in the feeders. The Boardman feeder is meant to feed at the entrance, but I strongly urge not to feed at the entrance. Put the feeder in the cap or surplus box. If you have granulated honey, quite hard, you may feed it right on the top of the brood combs, over the cluster.

2. Get your package bees to be delivered a little before fruit bloom and feed them until the crop comes. As to where to get them, see the advertisements in the Journal. Order them as far ahead as possible.

3. To transfer bees out of an old box, it is best to wait till fruit bloom is on, while the bees are making honey out of this bloom. Of course, if you do not transfer the brood, you must leave opportunity for the bees to take care of it for 21 days, until it is all hatched into worker bees. We prefer to transfer the brood in the way that is recommended in our "Honeybee," or Langstroth Revised.

4. Some people use both extracting and comb honey supers. If you do this, you will soon find out that bees prefer large combs to work in. We often used to place the sections in the center of the super and the extracting combs on both sides.

5. I do not understand that question. There are burr-combs in the brood chamber when the combs are too far apart or when there is too much space between them and the walls or between them and the supers. This must be remedied, if you don't want burr-combs.

6. Remove the winter casing as late as possible, for bees need shelter from sudden changes in spring. You must use your own judgment about this, as seasons differ and some of your colonies may need feeding earlier than others.

7. It is not difficult to find the queenless colonies. Old beekeepers recognize them by the behavior of the bees and by the fact that they carry little or no pollen while the other colonies are busy. But the surest way is to examine the inside of the hives. Those that have well developed worker brood have queens. Those that have no brood, or perhaps a few cells of drone brood only, are either queenless or have a drone-laying queen or a drone-laying worker.

NEW QUEENS AND PACKAGES FOR WEAK COLONIES

I am located in southwest West Virginia. I have ten colonies of Italian bees that should have been re-queened last August, but on account of it being necessary for me to be out of the state at the time, I could not give the bees the attention they should have had. I am planning to have ten two-pound combless packages and queens arrive from the South about April 10th. Please outline to me the best mode of procedure to get rid of the old queens and unite the two-pound packages and new queens with these old, rather weak colonies. Is the plan advisable, and shall I get good results? Or would it be better to hive the packages by themselves? I look forward to a honey crop from Sourwood in July, mainly, increase being a secondary consideration.

WEST VIRGINIA.

Answer.—I would hunt for the old queens and kill them, which will not be very difficult since the colonies are Italian and not strong. Then I would unite the pound packages to them, giving the new queens in a cage, for fear that the bees would kill them. Be sure and have all the bees well fed previous to uniting, as bees are much less apt to fight when they are well fed.

If you still fear that they will fight, then make the uniting gradual, by placing the new colonies on part of the combs of the old ones. Then kill the old queens and a little later unite their bees with the new colonies. But be sure and do not allow of any robbing, as that is the most frequent cause of fighting in colonies that are united.

Pound packages are usually shipped in crates that may be put inside of an ordinary Langstroth hive. So you can insert the bees of the pound packages into the hives by opening them and putting them either in one side of the colony after some combs have been removed or in an additional story on top, to be removed afterwards.

CANDY FOR BEES

I have a number of colonies of bees, bought last spring and transferred from home-made hives too late in the season to build up properly for winter. Some of them are very weak colonies and very light in stores and will have to be fed very early in the spring. I realize that they should have been requeened and fed in late summer and early fall, but could not do it.

1. I have had no experience in making candy and have no equipment other than an oil cook stove and some pans. Would you advise me to try making the candy, to feed syrup made from granulated sugar, or to feed honey? I can buy good extracted honey locally at about the same price per pound as granulated sugar.

2. If the syrup or honey is fed, will Boardman feeders be all right in cool weather?

3. I have a small quantity of granulated comb honey, mostly in shallow extracting frames. If this is put over the hives, will the bees use it? Should it be uncapped?

4. How early would you advise requeening in this section? There are no fruit trees here, but considerable spring wild flowers and usually a fair honeyflow from

mesquite, which I believe comes early in April. The main honey crop is from alfalfa later in the season.

5. I have thought about buying a tested queen and trying to rear my queens from her eggs. When should she be introduced and how early can the queen-rearing be begun? TEXAS.

Answers.—1. To make candy for bee feed, add water to sugar and boil slowly until the water is evaporated. Stir constantly so that it will not burn. To know when it is done, dip your finger into cold water and then into the syrup. When what adheres is brittle to the teeth, it is boiled enough. Pour into shallow pans, a little greased, and when cold break into pieces of suitable size. This candy is placed right over the combs above the cluster. It is the easiest way to feed. Extracted honey will do, of course, but it is much more likely to attract robbers.

2. If you wish to feed syrup, it will be all right, but do not put the feeders at the entrance, as there is no better way to attract robbers from other hives. The Boardman feeder or the pepper-box feeder may be used over the top of the brood combs, with a super over them.

3. Granulated extracted honey or granulated comb honey may be laid on top of the frames, and the bees will help themselves to it. It is not necessary to uncap the comb honey.

4. There is no hurry about requeening. You do not know how old the queens are, and some of them may be young. Wait till they have been laying some time, to judge of their ability.

5. Yes, it is a good plan to buy a tested queen or two to breed from. You can begin queen-rearing as soon as the spring is well open. Better wait till there is some honey in the fields.

STARTING WITH BEES

1. I want to start in with bees. How is the best way to start? I can take my hives to a neighbor and he will catch swarms for me this summer, or I could send for packages of bees by mail. Which method would you advise?

2. I have had bees for three years, but lost them all. One colony died for the want of food, and the other colony I put out about April 10. This morning I went to look at them and they appeared all dead. The combs were somewhat mouldy, so I scraped the bees all into a pan and poured them into the stove and burned them. Later in the day my little boy came in and told me that some of the bees which I had dropped at the hive were crawling around. Upon examination I found that a lot of the bees in the cells were alive. Did I burn a good swarm of bees, or were those that came to life some young bees which I scraped out of their cells?

3. The combs in my hives are mouldy and have a lot of dead bees in them. Could these be cleaned, or would it be better to put in new foundation?

4. How is the best way to clean old, mouldy frames? SOUTH DAKOTA.

Answers.—1. You can either get your neighbor to hive some bees for you or buy package bees. The former way will require less labor and watchfulness on your part, but is not quite so prompt in results. In either case, you should have some foundation in the frames of your hives, in order to secure straight combs. It is very important.

2. Evidently the bees which you burned up were only chilled. We have seen starved bees revived, by warming them up and feeding them, when they had not been chilled too long. Sometimes, also, bees will be chilled because they are not numerous enough to keep their hive warm during cold spring weather. However, I must say that chilled bees revived are not of very much



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Two-pound package with queen	$ 4.75
Eight-frame colony with tested queen	13.00
Select line-bred breeding queen	10.00
Untested queens	1.35
Tested queens	2.25

We expect to ship packages and colonies May 5 to 15, and untested queens May 25, these dates depending to some extent on weather conditions. **We sell only a very limited number of packages and eight-frame colonies.**

ALBERT G. HANN, Glen Gardner, N. J.

value, because there are not enough of them in the cluster, usually.

3. Dead bees may be cleaned out of a comb by brushing. If done carefully it will not damage the comb much. Usually when there are only a few, the bees of the colony take them out without much difficulty.

4. To clean old, mouldy frames, put them in a dry place, near a stove, for a few days. Sometimes it is sufficient to put them in the sun for an hour or two. If not very mouldy, they may be cleaned by colonies of bees, if you give them one or two at a time.

I would advise you to buy a good textbook and read it. It is all right to get a magazine, but the magazine will not give the indispensable first notions on beekeeping.

PACKAGE BEES FOR MISSOURI

1. I wish to send for a few packages of bees this spring. What time should I contract to have them arrive in north central Missouri, near Columbia?

2. What is the best form to get them in for quick increase? White clover is the main source.

3. Approximately how many Italian bees in one pound?

4. I put some brood foundation in frames last fall, but did not get to use same. Can bees draw this all right this spring, and will they accept it as readily as new?

5. If just for home use, would you use small square sections or chunk supers?

6. I have "Fifty Years Among the Bees." I see Mr. Miller recommends baiting the middle of the first super put on. How is this done? MISSOURI.

Answers.—1. You had best write to two or three southern breeders right away. The bees should reach you at the blooming of fruit trees. Here it is about the last of April, but with you it must be earlier. Get three-pound packages. They are the best.

2. Get them with queens, as they will go to work on comb foundation as soon as you receive them. Feed them if necessary.

3. There are about 5,000 bees in a pound, whether Italian or common bees.

4. Yes, brood foundation put in the frames last year is all right to use this year. You may warm it up a little in the sun before putting it in, but the bees will do that themselves if you fail to do it.

5. If you produce honey only for home use, better not bother with the little section, but use half-story frames and consume the honey in bulk. The bees much prefer the larger combs to work in.

6. If you do not have baited combs or baited sections, the use of comb foundation will make up the deficiency. After the first year, you will have plenty of built combs to give them.

QUEENBEES FROM ITALY

Some few months ago I wrote you concerning some reliable queen breeders in Italy. If I remember correctly in some of the questions you answered in the American Bee Journal, you told the questioner he would have to order his queens through the Department of Agriculture at Washington. If so, who should I write to for information? OHIO.

Answer.—A law was passed to prevent the importation of bees from foreign countries. Thus it is impossible for any beekeeper to get bees from other countries except through the authorities.

The Government officials in charge of this matter are at the Bureau of Entomology, Washington, D. C. At present, Mr. Jas. I. Hambleton, the Apiarist in charge is the man to whom the matter should be referred. Mr. Hambleton is a very nice gentleman and he does all he can to help the beekeepers. So if you write to him, he will very probably tell you that all you need to do is to order your bees to be sent in the care of the Bureau of Enthomology. The bees will be examined on arrival and if they are found healthy will be forwarded to you.

We used to import bees without any regulations and never had any trouble. But in view of the numerous diseases and parasites which are constantly being found in all lines, it may be as well that such a regulation as the one mentioned above be enforced.

TREATING EARLY DEVELOPED EUROPEAN FOULBROOD

I have about thirty colonies of bees, a part of which are severely affected by European foulbrood. I controlled this disease fairly well last season by uniting all weak colonies and heading all black and hybrid colonies with Italian queens. But this spring it is a different story. There was some warm weather the latter part of February, and some available nectar, causing all colonies to start rearing lots of brood. The weather then turned off cold and wet and it has rained now for about a month. About one-half of the colonies have developed advanced stages of foulbrood and it is so cold and wet that nothing can be done for them. These bees are mostly all good, thrifty Italian stock. Do you think they will be able to clean up the disease when the honey-flow starts, or should they be put on clean combs? OREGON.

Answer.—Judging by your account, I imagine that what you have is not European foulbrood as much as starved brood or chilled brood. Foulbrood is irregular, a cell here and there among cells of healthy brood. But starved brood or chilled brood is in patches; usually the entire comb is chilled.

In either case, if there is much of it, it is better to take out the combs containing it and burn them up and have the bees cluster on new combs, with plenty of food. We have never tried to save combs or dead brood. We make a clean job of it, and we think it pays. It is hardly worth while to endanger the life of an apiary for the sake of a few combs.

BROOD IN TOP SUPERS IN SPRING

1. In order to leave the bees with plenty of honey, and give the queen plenty of room in the spring and summer, I left a super of honey on my seven-frame hives. In looking through them last week, I found that a number of the colonies have the super full of brood, but no brood in the bottom hive body. What should I do to force the queen to lay down below, or will she naturally work down later?

2. If a queenless colony is given a frame of brood to rear a queen from, would there be any drones at this time of year with which she could mate in three weeks' time? I understand that if queens do not mate before they are three weeks old, they will become drone laying queens and never mate in their lifetime. KANSAS.

Answers.—1. The habit of going to the top story and remaining in it is the greatest objection that we have to giving queens two stories to breed in. If your queens do not go down pretty soon, it may be advisable to exchange the two stories and put the super below until the queen has moved into the other story. It is often necessary, with small hives, to confine the queen to one story by the use of excluding zinc. With very large brood chambers, the excluding zinc is rarely necessary.

2. At this time of the year, here, there is not likely to be any drone brood far enough advanced to fertilize a young queen, but if you have some very strong colonies

there may be drones quite soon. It would be two weeks before a queen would be ready for mating after starting the breeding, and sealed drone brood, now, would be available.

IS GRANULATION INFLUENCED BY THE BEES?

Why does honey gathered by Italian bees granulate quicker than that of Caucasians? I have some gathered at the same yard, extracted on the same day. But one honey crystallized hard while the other only started to show a little granulation. N. J.

Answer.—I do not believe that honey gathered by one race will necessarily granulate quicker than that gathered by another race. But it is a well known fact that Italian bees are a little more discriminating than the common bees. For instance, we have seen common bees harvesting both white clover honey and honeydew, while the Italians gathered only white clover honey. This is probably why your Italians had honey which granulated more promptly than that of the other bees. There may be also a difference in the length of tongues of the two races, but I hardly believe that the difference is great enough to cause a difference in the kind of flowers they visit.

There may be also some difference in the ability of the bees of different races to ripen honey more or less speedily. We see a difference in the quality of butter of cows which is due to some insignificant difference in their habits.

BEES IN TWO HIVE BODIES

In October last I discovered a queenless colony, so I united it with another by placing it on top of the other colony, with a paper between the two. On account of the weather, I neglected to take the top hive off and packed them up as they were, both hives together. They had good stores.

Now, how would you manage the bees in those two bodies? ARKANSAS.

Answer.—If the colonies are not very strong and have united, the bees are probably all in one of the two hives. So you may remove the other and put on supers later.

If the two colonies united are strong enough to occupy both stories, I would leave them as they are and put the supers on later. If you work for comb honey you may remove one of the two stories and put the best brood combs from it into the hive that you leave on the spot. Then you can give what remains of the combs and brood, after shaking the bees off, to some weak colonies in your apiary. Do this just before putting on the comb honey supers.

Many people use double stories in using Langstroth hives, especially if they are eight-frame hives.

SPRAYING—PACKAGE BEES

1. Will spraying the fruit trees kill the bees?

2. Will a three-pound package of bees with queen put in a hive with comb foundation make a good colony that will make honey and swarm the first season? IOWA.

Answers.—1. Spraying fruit blossoms during bloom with arsenical compounds will poison the bees. But no rational fruit grower will any longer spray during fruit bloom. They know that they must spray before and after bloom if they wish to have good fruit and plenty of it. The bees are needed to fertilize the blossoms. Some people use repellants in their spray, but it is much better and cheaper to spray only just as soon the blossoms have fallen.

2. A three-pound package makes a good colony and will sometimes swarm and fur-

(Continued on page 191)



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Untested	$1.00	$ .85	$ .80
Select untested	1.25	1.00	.90
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Combless packages and nuclei f. o. b. my station:

One pound bees and queen, $2.75; ten or more, $2.50. Two pounds bees and queen, $3.75; ten or more, $3.50. Three pounds bees and queen, $4.75; ten or more, $4.50.

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Gentlemen:

Without obligation on my part, please quote prices. I have_____swarms.

_____Hives _____ Sections

_____Supers _____ Br. Fdn.

_____Frames _____ Super Fdn.

_____Bodies _____

Name_____

Town_____ State_____

Address_____

nish a crop of honey. But it must be carefully looked after if it is received at a time when there is no honey in the fields. Of course, the amount of crop it will gather depends upon the season.

FEEDING SOUR HONEY

I have several supers of honey which was made in 1925 and has been stored in a basement ever since. It has partly granulated and smells sour, also tastes a little sour. Would there be any harm in letting the bees carry this in, in the early spring, when they are flying nearly every day, or do you think it would poison them?

MINNESOTA.

Answer.—I have seen just such cases as this before, and I am quite sure that, if you don't feed it to the bees for winter, it will be all right to help them in spring breeding. This should serve as a lesson to you, not to leave any honey in a basement or any place where there is a chance for it to gather moisture. If that honey had been stored in a dry attic it would probably be about as good as new honey.

You can still make good use of that honey for your bees, provided you don't give it to them in quantities large enough for them to store it in the supers.

Propose Uniform Label

It was the concensus of opinion of the bee men from five counties meeting in Uvalde, Texas, the latter part of the month of February, that a uniform label advertising the honey from the catclaw and guajilla belt of Texas should be created, and committees were appointed to advise on the matter. The meeting was presided over by Jack Patterson, president of the Uvalde Beekeepers' Association. Discussions were had on packing, shipping, equalizing of prices, improving the method of marketing, and proper labeling. Among those taking a leading part in the round-table talks were J. W. Reid of Uvalde, secretary of the beekeepers' association; Joe B. King of Batesville, and C. C. Conner of Dilley.

The counties represented included Uvalde, Kinney, Dimmitt, and Zavala. The sense of the gathering was that the Uvalde district produces some of the finest honey in the world and that the bee men should take advantage of that fact by upholding the grade and by giving assurance to the purchaser that he is getting what he expects when he buys honey from the catclaw and the guajilla belt of Texas.

A Suggestion to Secretaries

Copies of every resolution adopted by a beekeepers' association should be sent to the office of Bee Culture in the United States Department of Agriculture. The list of officers elected each year should also be sent there. Such information should always be available in the government office, and few secretaries remember to send it in.

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	Nov. 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12
Untested	$2 00	$ 8 50	$15 00	$1 50	$ 7 50	$13 50	$1 25	$ 6 50	$11 50
Select Untested	2 25	9 50	18 00	1 75	9 00	15 00	1 50	7 50	13 50
Tested	3 00	16 50	30 00	2 50	12 00	22 00	2 00	10 50	18 50
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Select tested, for breeding, $7.50

The very best queen, tested for breeding, $15.00

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BECAUSE our bees and queens cannot be beat, their quality always brings repeat orders.

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Our Prices On Queens

Untested laying queens	$1.00
Lots of 100—each	.90

Package Bees

1- 9 Three-pound packages	$4.15 each with queen
10-24 Three-pound packages	3.80 each with queen
25 or more 3-lb. packages	3.70 each with queen
1- 9 Two-pound packages	3.15 each with queen
10-24 Two-pound packages	2.80 each with queen
25 or more 2-lb. packages	2.70 each with queen

We will also be glad to quote you delivered to your station. Shipments start about April 1. No nuclei, virgins or one-pound packages.
Special prices on large lots

Reference: Bank of Corning, Corning, California

All package bees are sent by express. If no agent at your station, give nearest express station. Circulars furnished on request. Queens always shipped inside package bee cages.

10% Books Your Order. Balance Before Delivery

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Conditions In Arizona

Bees wintered with plenty of stores. Young queens did not stop breeding, although it was probably a little cooler than usual, and most of the cottonwood leaves were frosted to the top, but they have been in bloom the past ten days and the new leaves are large as dimes.

The rains have brought up the desert, and if we get another good rain it will make the desert a sea of grass and flowers. If so, it will make a great swarming year.

The California freight trucks called at our apiaries and took several thousand cases of honey to be loaded on board vessels for Germany and Switzerland, making a good foreign market.

Several years ago I was asked by officials to act as State Apiary Inspector, but as I had about twenty apiaries of my own, I recommended my neighbor, P. H. Benson, who was appointed to fill that position in 1923 and has given the best of satisfaction. I quote a part of his report on his last trip last fall: "I only found one apiary with three colonies affected." He now believes the entire state free of all foulbrood and other diseases.

I have 700 colonies in the mountains, 160 miles from home. I worked with them ten days in April and ten days in May, and no more until June and July. We extracted 1168 cases of 120 pounds each, or four carloads, from 700 and 800 colonies in my home yards.

He raises many young queens each fall, wintering them over full colonies with screen between, which he has to sell or use in requeening, which controls swarming.

B. A. Hadsell, Arizona.

From California

The following notes from a breezy letter received from our friend L. L. Andrews will be of interest to many of his friends. Mr. Andrews and wife drove from California to the East:

"I was very sorry that I had so short a time to visit at Hamilton last summer. It was a wonderful trip and one we will always remember. The one regretful thing about it was the short time we had to visit with our friends. The only way I know for them to get even is by spending double time with us when they come to California.

"Was glad to get the American Bee Journal in a flat folder and not rolled. We have had some nice rains already this season and it is showery today, with good prospects for 1928 so far."

Corona, March 5, 1928.

A Helpful Service to Beekeepers

By A. L. BOYDEN

How a Large Mauufacturer of Bee Supplies is Cooperating with Beekeepers to Help Them Prosper.



Your profits are measured by the difference between your cost of production and your selling price. In other words, you want to produce honey and wax at low cost, and sell at a good price.

Your cost of producing honey depends on location, weather, management, and equipment. Some of these things we can't control, so let's control what we can.

By using the most efficient equipment, you can materially decrease your producing costs, and thus make more money. We have tried, in our new Booklet, to tell you about supplies that will genuinely help you produce honey and beeswax at lowest cost. We have also issued a pamphlet, "Efficient Production of Honey and Beeswax," containing helpful ideas on efficient production. Both gladly sent upon request.

Good Marketing

You and I both like to see honey bring a good price. Likewise we both want a good market for beeswax. What shall we do about it?

I am told that the American people consume an average of 100 pounds of sugar per person a year, and only 2 pounds of honey. This is a fundamental fact we must change. A slight improvement is showing, but we must all work together for a much better market. In the meantime, the A. L. Boyden organization offers to help you market your crop in whatever way is most satisfactory to you.

Beeswax is finding new uses, which you will be very pleased to hear. A new leaflet, "Marketing Honey and Beeswax," has been compiled by the A. L. Boyden Company, telling about some of these new uses, and about honey and wax in general. I will be pleased to have you write me personally for a copy.

I feel we are all in the same big family, with common problems. I hope you will feel free to talk with me, by letter or personally, or with my associates, as you would talk with your neighbor beekeeper. Tell me what your problems are. Let me offer you the benefits of my thirty years' experience in the beekeeping business and the large facilities of our organization. Write A. L. Boyden Company, Dept. 125, Alhambra, California, or 52 Main Street, San Francisco.

—(Advertisement)

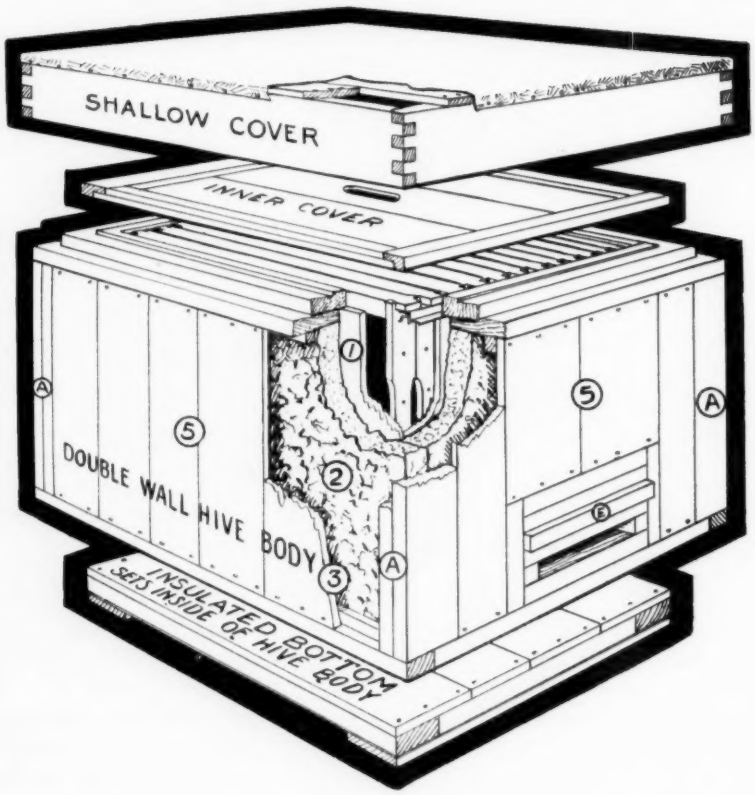
Hutzelman's Solution for American Foulbrood

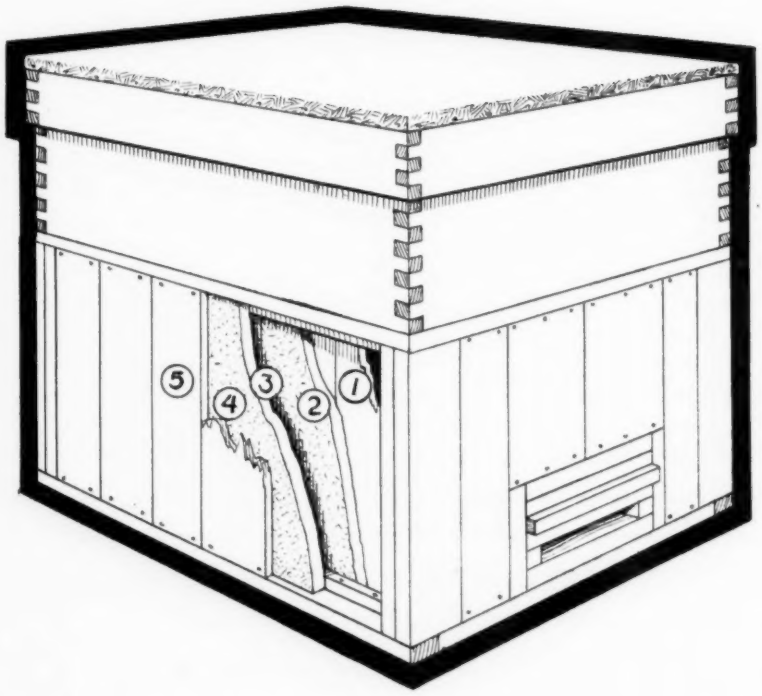
Use Alcohol—Formalin to be safe

Ask your dealer or write to

J. C. HUTZELMAN, Glendale, Ohio

Woodman's Protection Hive





Specifications

1 Inner Wood Hive Wall.

2 Celotex, Corked or other desirable insulation.

3 Dead air space and liner strips.

4 Celotex insulator.

5 Outer Wood Hive Wall, Celotex or galvanized sheet panels can be used.

Total thickness of hive wall 2⅜

Galvanized metal roof cover

Winter rim for overhead packing

Insulated, adjustable, removable bottom board

Adjustable entrance

Takes standard 10-frame supers or bodies

Hive body holds 11 frames with 1⅜ spacing, 10 frames with 1½-inch spacing, 9⅛ or 11¼ inches deep

Any desirable insulating material can be used, such as Celotex, Corkboard, insulating paper or other materials. A square foot of Celotex weighing 10 ounces was left floating in a tub of water for seven days. It absorbed just two ounces of water, the upper surface was entirely dry, it completely dried out within two hours after removal, with no warping or disintegration.

Descriptive matter and large illustrations will be mailed on request.

A. G. Woodman Co., Grand Rapids, Mich.

Meetings and Events

League Membership Announcement

The new membership fee in the American Honey Producers' League passed at the San Francisco convention went into effect immediately. This reduces the individual membership fee from $3.00 per year to $1.50. The organization membership fee was increased from $3.00 per 25 members to $6.00 per 25 members. The initiation fee is $6.00 for local associations and $12.00 for state or larger associations. The initiation fee is the only assessment made the first year of affiliation.

The League still has on hand about 200 law books. It has been decided to move these as quickly as possible and close the account. Therefore, old members may secure a law book and the renewal of their membership by transmitting the sum of $2.00. New members may have the same privilege for $2.25. This special offer will last until the supply of law books is exhausted.

We have yet been unable to secure a secretary to take the place of E. L. Sechrist, resigned. Until such time as a new secretary can be employed and installed in office, memberships may be sent to the office of the president, Laramie, Wyoming.

We hope that there will be an immediate and hearty response to the membership call, so that the business of the League may go forward rapidly this year. "The Producer" will be published as usual and will be made a more effective journal than last year. The proceedings of the San Francisco convention will be published in the early issues. If you have not renewed your membership since November 1, 1927, you will miss these important issues. The mailing of the Producer to delinquent members was, of necessity, stopped with the February number.

Sample copies of the Producer are always available free of charge, for the asking. The February, March, and April issues will be of tremendous value to everyone interested in the honey marketing problem. Don't fail to get them.

C. L. Corkins, President.

Saskatchewan Short Courses

Great interest was shown in the two beekeeping short courses conducted in the Province of Saskatchewan during February.

The course held from February 6 to 11, at the University of Saskatchewan, Saskatoon, was conducted by Dr. C. F. Patterson of the University, and he was assisted by Mr. C. B. Gooderham, Dominion Apiarist; Mr. L. T. Floyd, Provincial Apiarist of Manitoba, and R. M. Pugh, Provincial Apiarist of Saskatchewan. There were twenty-four registered students in attendance at this course, mostly drawn from the northern part of the Province.

At the Regina course, held from February 13 to 15, there was an even larger group in attendance, forty-two students being registered. This course was conducted by myself, assisted by the same apiarists.

Beekeeping is rapidly developing in Saskatchewan. There was 191 per cent increase in the 1927 crop over the 1926 crop and it is expected that sufficient honey will soon be produced to supply the home demand.

A great deal of interest was shown in the efforts to absolutely clean up American Foulbrood in the Province. There is very little at present and, with the clean-up work in progress, it is expected that it will be eliminated within three years.

R. M. Pugh, Provincial Apiarist.

North Dakota Short Course and Convention Well Supported

With a crowd varying from twenty to forty, and with one hundred to one hundred and fifty at the convention, North Dakota beekeepers showed vigorous support of Professor Munro's program at the twenty-ninth annual Farmers' Week, at the State College at Fargo, January 16 to 20. A good, practical program.

The marketing situation was uppermost at the convention. After due deliberation and conference with Mr. A. W. Kjosness, manager of the Mountain States Honey Producers' Association, the North Dakota producers signed up as members of that association for the required ten-year period. Practically all the larger honey producers of the state were at the convention, and, as nearly as we could find out, the majority of them joined.

North Dakota has two good pilots for the sweet clover program in Professor Sheppard and Dean Walster. Professor Sheppard's amusing and entertaining story of his conversion to sweet clover as a pasture proposition for cattle was certainly pleasing. Apparently, Dean Walster was the sweet clover "sky pilot" that brought about Sheppard's conversion. The two together are doing a great deal to spread the gospel of sweet clover virtues among the farmers of the state. Beekeepers cannot object to this.

Two Hundred at Manitoba Convention in February

Over two hundred beekeepers attended the convention at the Royal Alexandria Hotel in Winnipeg, January 31 and February 1. Great in-

PURE ITALIAN QUEENS

Of tested quality. April to November delivery. Bees inspected. Select untested, $1.00; dozen, $9.00. Discount on advance orders.

HUNTER & REAMY, Quitman, Ga.

Golden Queens and Banded Bees

Untested queens.....$1.00 each
Tested queens.....$1.50 each
Bees.....$1.50 per lb.
Nucleus.....$1.50 per frame

Bees inspected; free from disease

J. W. SHERMAN, VALDOSTA, GA.

OUR 1928 CATALOG

now ready and being mailed to addresses we have. Send us your name for an up-to-date catalog full of information of the latest improved hive fixtures, etc., A. I. Root Co.'s manufacture. A well-assorted stock carried on hand for prompt shipments and quick service.

J. NEBEL & SON SUPPLY CO.
Montgomery County. High Hill, Mo.

WHY PAY FOR THINGS YOU DO NOT NEED?

No boarders or flappers in our package bees—but sturdy, honest workers. Let me tell you how I strain out the undesirables.

PRICES IN LINE

R. V. STEARNS, Brady, Texas

Running's Bees and Queens

ITALIANS THAT ARE HONEY-GETTERS

We are now booking orders for 1928 delivery. Shipping begins April 1. We have been producing package bees in the South for eight years and have one of the best package and queen-rearing establishments in the South, and have been producing large crops of honey in Michigan for 28 years.

WE HAVE THE STOCK AND KNOW THE BUSINESS

Try one or a hundred and you will want more. They get the honey. We want to show you. Bees and Queens shipped from Epes and Sumterville, Ala. Our prices are right, stock unexcelled and service guaranteed. Write for prices, stating how many you can use.

David Running,
Filion, Mich.
After Jan. 15, Sumterville, Ala.

Golden Northern Bred Queens

Write for Prices for Spring Delivery

HERMAN AHLERS, Astoria, Oregon

BREEDING QUEENS

We have a number of the best breeders we have ever offered for sale. Every colony was requeened last year from a breeder of exceptional merit, and the breeders selected from this lot are sure to please the most exacting. Breeders can be shipped immediately. Price, $10.00 each. Service guaranteed for the season. Get our free book, "About Bees."

JAY SMITH

Route 3 **Vincennes, Indiana**

PETTIT'S PACKAGE BEES SATISFY

We start shipping April 15. Order now to secure best shipping date

Prices with Best Young Italian Queens

Two-pound packages—5, $4.00 each; 10, $3.75 each; 25, $3.65 each; 50, $3.50 each; 100, $3.35 each.

Three-pound packages—5, $5.00 each; ten, $4.75 each; 25, $4.65 each; 50, $4.50 each; 100, $4.35 each.

For package bees without queens, deduct 80 cents from each of above prices.

MORLEY PETTIT

Georgetown, Ont., and Valdosta, Ga.

MOTTS' NORTHERN BRED ITALIAN QUEENS

Reared second door from the postoffice. Save three days' confinement by R. F. D. and hot mail sacks from southern route. Queens selected, guaranteed to be purely mated. April and May, $1.25 each, $13.00 for twelve. After June 1, $1.00 each; 24 at 95c, 50 at 90c, 100 at 85c each. Select tested, $2.00. Breeders, $5.00 up; virgins, 50c. See list. No disease. Safe delivery and satisfaction guaranteed.

E. E. MOTT & SON, Glenwood, Michigan

PACKAGE BEES

with

Pure, Young, Beautiful Italian

QUEENS

2-lb. package $3.50

3-lb. package $4.50

Substantial discount on large orders

OHMERT AND SON

Dubuque, Iowa

SEND FOR OUR LIST OF

Real Dahlia Bargains

OLAF ELTON, Port Washington, Wis.

BRIGHT ITALIAN BEES and QUEENS

What is the value of Package Bees if headed with poor Queens?

LESS THAN NOTHING!
WHY TAKE A CHANCE?

My queens are developed under most approved, modern methods, with the result that customers from 32 states praise gentleness, prolificness and honey production. Shipments made promptly over trunk lines from New Orleans. Health certificate furnished.

Two-pound package with select untested queen: 1, $4.00; 5, $3.50; 50, $3.25; 100 or over, $3.00. Extra bees, 75c per pound.

Queens to June 1, $1.00 each

M. STEVENSON, Westwego, Louisiana

PURE ITALIAN QUEENS AND BEES

APRIL DELIVERY

1 to 10 ..... 90c each
11 to 100 ..... 75c each

Select untested, 10c additional per queen. Tested, 50c additional per queen.
2-lb. package with queen $3.50
3-lb. package with queen $4.50

There has never been any disease known here.

Satisfaction guaranteed

A. L. WEBB, Proprietor

CALVERT, ALA.

ITALIAN BEES THAT PLEASE

Reacroft

Select untested, $1.00; dozen, $11.00. Select tested, $2.00. Breeder, $6.00. A simple method of queen-rearing given with each breeder. A safe method of introduction with each order.

GEORGE H. REA

Reynoldsville, Pennsylvania

WHY WAIT

until the last moment to place your order for package bees and queens and then take chances on getting them in time to give best results? Order early and have bees shipped when you want them.

Safe arrival and satisfaction guaranteed. Health certificate with each shipment.

Two-pound package with untested queen, $4.75; three-pound package with untested queen, $5.75. Untested queens, $1.25 each.

Write for circular and complete price list, also prices on quantities.

J. M. CUTTS & SON

R. No. 1, Montgomery, Alabama

When Writing Advertisers Mention The American Bee Journal

terest is manifested in the Province this year, due to the fact that so much of the honey to win in Canadian competition at the Royal show at Toronto was from Manitoba. The first prize on extracted honey went to Manitoba. Brandon was especially proud of the record of its beekeepers, since four of the Royal prizes went to that town. It is evidently a choice location.

Cooperative marketing and the grading of honey are already being considered. Mr. Gooderham, Dominion Apiarist, is working on the problem of grading and hopes to have Canadian grading rules ready for use for the next crop season. In Canada, unlike the United States, grading is in the hands of the Federal Government.

The convention appointed a committee of inspection charged with securing an assistant to help the present Provincial Apiarist, L. T. Floyd. He needs assistance. If Floyd were twins he couldn't do all the work that comes up.

Manitoba Beekeepers Put in an Active Ten Days at University Short Course

With twenty-eight beekeepers of the Province enrolled, the beekeepers' short course at the Agricultural College of the University of Manitoba, January 23 to February 3, sets another high record, not quite so good as last year, but still pretty close to the top. The only other course in the college ahead of it was the poultry course.

It is said that the largest percentage of failures among beekeepers is from those who do not start properly. Evidently, the younger generation (those younger in experience at least) in Manitoba intend to get off on the right foot. Professor Mitchener had an unusually well balanced course for a ten-day period, including practically all the fundamental instruction which could be given in this short time. It was certainly worth the cost of railroad fare, sleeping quarters and food to be there, to any Manitoba beekeeper wanting to make money from his bees.

The wonderful report of the results of package bees in this Province continue to surprise us. Figures gathered by Professor Mitchener from twenty-five different reporters show that two-pound packages arriving in May produced nearly as much honey in 1927 as overwintered colonies. Of course, this is only one of the factors in favor of packages. There are many others to be considered. Most beekeepers will decide to winter their bees, some will decide to buy packages entirely. Such figures are interesting, however.

MR. PACKAGE BUYER

In order to introduce Palmetto Bees to new customers am offering them at reduced prices for balance of season, prices as follows: 1 to 5-3 lb. package $4.25 each; 5 to 10, $3.90 each; 1 to 5 two lb. packages $3.25 each; 5 to 10 $2.90 each. Queens $6 per dozen; $48 per 100, after June 1. Palmetto queens good as any, superior to many.

C. G. ELLISON, Belton, S. C.

SUNNY LAND BEES and QUEENS

LIGHT THREE BAND ITALIAN

April Delivery. State inspected. Safe delivery and satisfaction guaranteed

Two-pound combless package with untested queen, $3.50; ten, $34.00; twenty-five, $83.25; fifty, $165.00; hundred $325.00. Three-pound package $1.00 more than two-pound package. Two- and three-frame nuclei with untested queen same price as package, respectively. Vigorous and profitable untested queens $1.00 each; dozen, $10.00; hundred, $67.00

We solicit your patronage on the merits of our quality service and price.

CRENSHAW COUNTY APIARIES
Rutledge, Alabama

Choose Labels Wisely

You Can't Go Wrong with A-B-J Labels

They sell honey and are priced right. Send for complete catalog

AMERICAN BEE JOURNAL
HAMILTON, ILL.

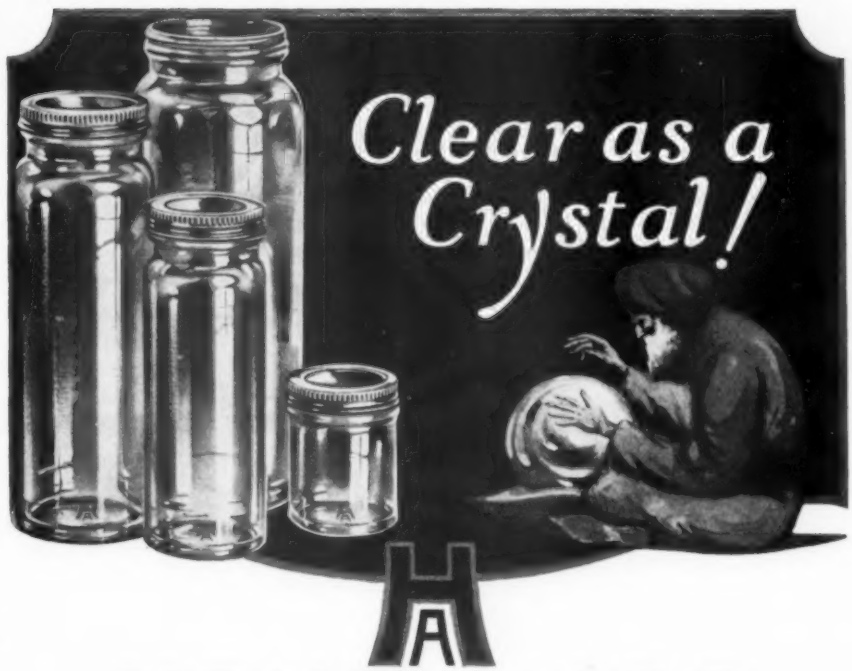


TRAVELERS select the Great Northern for its wonderful location in Chicago's "loop". They return because the large comfortable rooms, homelike environment, attentive service, excellent food and moderate charges make it an ideal hotel.

400 Newly Furnished Rooms $2.50 a day and up — Sample Rooms $4.00, $5.00, $6.00, $7.00 and $8.00.

New Garage One-half Block
Dearborn St. from Jackson to Quincy

Walter Craighead, Mgr.



HONEY JARS
will sell your honey

Made of Clear Glass they give that increased sales value to your honey. No panels to catch shadows which darken the color. Beautiful in Clarity and Pattern and strength in Construction. A trial will convince you!

SIZES

Individual, half pound, one pound & two pound
Accurate Graduation

DISTRIBUTORS

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THE A.I. ROOT COMPANY — OFFICES - CHICAGO, ILL. COUNCIL BLUFFS, IOWA SAN ANTONIO, TEX - ST PAUL, MINN. SYRACUSE, N.Y.
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HAZEL-ATLAS GLASS COMPANY
GENERAL OFFICES
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Combless Packages Italian Bees

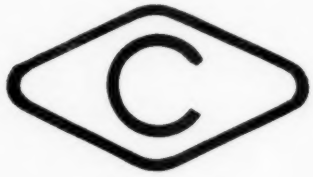
Prompt, satisfactory service. Health certificate with every shipment, and safe arrival guaranteed. Now booking orders. Deliveries to start April 15.

2-lb. packages with select young queen—1 to 24, $3.50; 25 to 49, $3.35; 50 to 100, $3.10 each.

3-lb. packages with select young queen—1 to 24, $4.50; 25 to 49, $4.35; 50 to 100, $4.10 each.

Queens—Untested, 1-9, $1.00; 10-24, 95c; 25-49, 90c; 50-100, 85c each.

Homer W. Richard, 101 S. Jefferson, El Dorado, Ark.

TRADE  MARK

ANNOUNCING

BETTER CANS FOR HONEY

FROM

COAST TO COAST

CONTINENTAL CAN COMPANY, INC.

NEW YORK CHICAGO BALTIMORE ST. LOUIS SAN FRANCISCO
JERSEY CITY CINCINNATI ROANOKE DETROIT
SYRACUSE SEATTLE SAN JOSE
LOS ANGELES

Crop and Market Report

Compiled by M. G. Dadant

For our April crop and market page, we asked our reporters to answer the following questions:

1. How have bees wintered?
2. Prospects for honey plants.
3. How much honey on hand?

HOW DID BEES WINTER?

It was, of course, slightly early to get any true condition of how bees wintered in the northern sections of the United States and in Canada, except that those that were wintered out-of-doors seemed to have profited by frequent flights and seem to be in good condition.

Throughout the eastern sections, the Southeast and entire South, bees seem to have wintered in very good condition, although we have reports of some difficulties from starvation in Alabama, Texas, Arizona, and some reports also that wintered bees were running short of stores in Colorado, Idaho, and Washington.

As a general rule, however, bees seem to be coming through in very good condition—in fact, better than a year ago.

HONEY PLANT PROSPECTS

Throughout the eastern sections and Central West, white clover plants went into winter in excellent conditions, and prospects were favorable for the spring season.

There has been, however, a shortage of snow during the winter, which has not boded well for the clovers, inasmuch as there has been considerable freezing and thawing, which would indicate a heavy and consequent killing of the clover.

Recent snows throughout the entire North, however, have undoubtedly been of benefit to keep the ground covered and protect the clovers.

Examination of clover plants in our immediate vicinity, which has also been bare of snow, would indicate that the clover on the date of writing this, March 17, has been slightly hurt by the constant freezing and thawing, but there will still be sufficient plants to make for a honey crop if other conditions are satisfactory.

Sections south and still in the clover belt report unusually good conditions, with a large amount of white clover.

The complaint of an absence of snow and possibility of too much dry weather and too much freezing and thawing applies to practically all clover regions from the Missouri River east.

In the southeastern section of the country the first honeyflows are already on, and honey plant conditions are unusually good. Some sections of Texas, however, are suffering from the drouth.

Reports from Montana are that conditions are unusually good there, with heavy snows, and the same seems to apply to all the northen intermountain states.

The northern west coast is favorable as to honey plant prospects, and California also has had desirable rains, not as much as last year, but above the average, so that the prospects are considered better than average.

HONEY ON HAND

There is no honey to speak of in the New England states, and honey is fairly well sold also in New York and New Jersey. In fact there should be scarcely any carryover there.

The same is true of the entire southeastern country, with the exception of possibly a small amount carried over in Florida because of the disappointing shortage in population there compared to one or two years ago. However, there is no amount sufficient to cause any anxiety, although a few beekeepers have heavy productions on hand.

Kentucky is the only southern state which reports much of a carryover, and this is less than 20 per cent.

Texas is practically sold out, except possibly 10 per cent of the crop, which represents mostly the poorer grades of honey.

Arizona and New Mexico are completely sold out.

As concerns the central section of the country, Pennsylvania perhaps has 15 per cent of its honey on hand. Other states which report larger quantities of honey on hand are: Ohio, 20 per cent; Wisconsin, 20 per cent; Illinois, 20 per cent; Michigan, 15 per cent; Minnesota, 10 per cent; Indiana, 15 per cent; Iowa, 15 per cent; Nebraska, 15 per cent; Kansas, 15 per cent.

In Missouri, Nebraska, and Oklahoma there will be very little carried over.

In the intermountain territory conditions are unusually flattering. There are a number of cars still held, but it is anticipated that there will be no difficulty in disposing of practically all of the crop before the new crop is ready for the market.

As a matter of fact, taking the situation all in all, there will be very much less honey carried over than a year ago, and prices are ruling far in advance of what they were this same time last year, when an unusual slump had been felt.

There are probably more beekeepers suffering from holding their honey on hand just now than there were at the same time in 1926, but there is a difference, and that is that it is not big carlot producers who are holding, but a similar number of smaller beekeepers in the Central West, who have distressed lots of honey on hand, having either too much honey to sell locally or too little to make carload shipments away.

By far the larger number of beekeepers, even in the Middle West, however, have disposed of their crop, and it is very probable that all of the honey of the Central West would not equal the carloads still held by the intermountain territories, which they expect to dispose of.

It is unfortunate that some of these Central West distressed lots are now seeking markets at a cut price figure in order to be unloaded. We believe this is true especially of comb honey, which has been of unusually poor sale in many instances and has caused much worry on account of the length of carryover and the difficulty of keeping from granulation.

However, we cannot be pessimistic on the beekeeping conditions as a whole, because, in spite of the heavy crop in central western sections and the moderate crop in intermountain territory, much of this honey has been disposed of, probably thanks to an invigoration of the foreign markets.

In the Canadian provinces conditions have picked up materially.

Ontario still has considerable honey to dispose of, but anticipates no difficulty in reducing the carryover to a smaller quantity.

In Manitoba conditions have improved. The publicity accompanying the short course and big beekeepers' meeting in Winnipeg created sufficient interest in the public, so the honey has moved off readily as a consequence.

Alberta and Saskatchewan are likewise disposing of their crop without difficulty.

Bees have wintered satisfactorily so far in these northern sections and heavy snows make honey prospects favorable.

CLASSIFIED DEPARTMENT

Advertisements in this department will be inserted for 5 cents per word, with no discounts. No classified advertisements accepted for less than 35 cents. Count each initial or number as one word.

Copy for this department must reach us not later than the 15th of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent.

As a measure of protection to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisements of used beekeeping equipment or of bees on combs must be accompanied by a guarantee that the material is free from disease or be accompanied either by a certificate of inspection from an authorized inspector or agreement made to furnish such certificate at the time of sale.

BEES AND QUEENS

FULL value queens soon ready to go. A card brings circular.
R. V. Stearns, Brady, Texas.

GASPARD'S high quality golden and three-banded Italian queens and bees are now ready for spring 1928. Prices as follows: Two-pound packages on frames of brood and honey built from Dadant's foundation, Hoffman frame, $3.50 each; each additional pound, $1.00. Two frames nuclei, $3.50 each; each additional frame $1.00, and each additional pound of bees to each nuclei $1.00. Also, if packages or nuclei are wanted without queens, deduct $1.00 each. Combless packages shipped in light, roomy cages, on sugar syrup, 25c less per package. Liberal discount on quantity. Twenty per cent books your order. Send for free circular. We believe we can save you money. Health certificate with each shipment, and safe arrival guaranteed. Address J. L. Gaspard, Hessmer, La. References: Peoples Saving Bank and Trust Co., Hessmer, La. **Remember Kellogg's.**

PETERMAN'S select queens are raised from best breeders obtainable and by the latest methods. They are yellow clear down and produce three-banded bees. Try them. One, $1.00; six, $5.50; twelve, $10.00.
H. Peterman, Lathrop, Calif.

FOR SALE—Choice bright Italian queens. I have been building up this strain for 25 years for hustlers, good winterers, gentleness, and fine color. Health certificate furnished. Prices: Untested queen, $1.25; dozen, $12.00. Breeder, $10.00. After September 1, $10.00 per dozen. Emil W. Gutekunst, Colden, Erie Co., N. Y.

PURE ITALIAN QUEENS—Untested, $1.00; tested, $1.50. Two-pound package, $3.00. Add price of queen wanted. Safe arrival guaranteed after May 10. Forty years' experience breeding and shipping bees and queens. Birdie M. Hartle, 924 Pleasant St., Reynoldsville, Pa.

FOR SALE—Two-pound package bees and Italian queen, $3.50 each. One package free with every ten ordered. Please write your wishes. Benson Bee Line Apiaries Co., Galena, Ill.

PETERMAN'S select Italian queens from sunny California. One, $1.00; six, $5.50; 12, $10.00; 25, $20.00; 100, $75.00. Safe delivery and entire satisfaction guaranteed. H. Peterman, Lathrop, Calif.

EVERY day is bargain day. Send in your order early for package bees and nuclei. Bees, 90c a pound; queens, 85c each. Three-band Italian queens, the kind that get the honey. Can fill your order, large or small. When you want the best money can buy, just send me your order.
W. H. Moses, Lane City Texas.

PETERMAN'S select queens are solid patch layers and build up colonies quick. If quality counts, we have them at no greater prices. One, $1.00; six, $5.50; twelve, $10. H. Peterman, Lathrop, Calif.

DON'T GUESS—Be sure every queen you buy will arrive safely, be purely mated and give one full year's satisfactory service or be replaced free. That's our guarantee to you. Holloway Apiaries, Marietta, Okla.

IF you want bees that are gentle to handle, good honey gatherers, and beautiful to look at, my strain of golden Italians will please you. Prices: Untested, $1.05; six, $5.50; twelve to forty-nine, 80c each; fifty or more, 75c each. Health certificate, safe arrival and satisfaction. Hazel V. Bonkemeyer, R. 2, Randleman, N. C.

I SELL what I advertise, and what I sell advertises me. Try my bees. Two frames brood and honey, two pounds bees, one untested queen introduced, $6.00 per package; five packages or over, $5.00 package, f. o. b. here. Twenty per cent books order. May delivery. Health certificate with each shipment. My bees have been selected from the best of Louisiana's rehabilitation stock. **Remember Kellogg's cereals.**
L. J. Bond, St. Francisville, La.

FOR SALE—Golden Italian queens, $1.00. Bright yellow bees; splendid honey gatherers. Cap honey a beautiful white. Once a customer, always one. Queens ready to mail May 20.
J. F. Michael, R. 1, Winchester, Ind.

BEES when you want them. Light colored three-banded Italians. Safe delivery guaranteed. Health certificate furnished. Two-pound package with queen, $4.00; ten two-pound with queen, $37.50. Three-pound package with queen, $4.75; ten three-pound with queen, $45.00; one five-pound with two-frame brood and honey and queens, $6.25. Oscar Mayeux, Hamburg, La.

LOUISIANA strain of three-banded Italian bees and queens, gentle and real honey gatherers. Shipped with health certificate, on sugar syrup feed. Book with 10 per cent deposit with order. Two two-pound packages bees with select young and laying queens, $7.25, and each additiontal package $3.25. For three-and four-pound packages, add 75c per pound. Two two-frame nuclei with good queen, built up strong, $8.75; each additional, $4.00 each. For three-frame, add 75c each. The above price is for all the season 1928. Prompt answer for further information or large order. Keep this ad. Victor Prevot, Southern Beekeeper's Association, Mansura, La.

ITALIAN queens and package bees. Two-pound package bees with queen, $3.00; three pounds, $3.75. State inspection certificate with each shipment. Safe delivery and satisfaction guaranteed. The Mangham Apiary Co., C. S. Duncan, Prop., Mangham, Louisiana.

THRIFTY Caucasian queens from daughters of imported mothers. After April 15: One, $1.50; twelve, $14.00. Safe arrival. Tillery Bros., Greenville, Ala., R. 6, U. S. A.

BEES AND QUEENS—Two pounds of bees with queen, $2.90; three pounds, $3.80, in quantities. See my large ad, page 203. H. E. Graham, Cameron, Texas, Box 735.

PACKAGE bees with queens or without young bees; no drones, full weight, syrup feeder in cage. Two-pound package with untested queen, one to ten, $3.50; ten or more, $3.25. State inspection certificate attached. Prompt delivery. Satisfaction guaranteed. Little River Apiaries, Gause, Texas, Box 83.

QUEENS—Place your order at once for our famous select untested laying Italian bees, guaranteed in every particular, at the following prices: One, $1.00; 12, $10.00; 100, $80.00. First shipment of 1928 queens March 1. We devote our time exclusively to the producing of the best queenbees possible. No bees in packages, nuclei, etc. Edson Apiaries, P. O. Box 701, Gridley, Cal.

PACKAGE BEES—Hardy Northern. Van's Honey Farms, Hebron, Indiana.

GERMAN bee shipper. Bees and queens in pound packages, leather-colored Italians. If you want good bees, prompt service and fair treatment, give me a trial. Shipped on sugar syrup without comb. Two-pound package with untested queen, $3.50; ten or more $3.25. No disease. Health certificate attached. Ten per cent books orders. Satisfaction guaranteed. William Piefer, Gause, Texas.

LATHAM'S "She-suits-me" untested three-banders, $1.50 by return mail; $1.00 if booked in advance. Queens ready about May 20. Allen Latham, Norwichtown, Conn.

WE will accept honey in payment for package bees, sizes two pounds or over. Student's Bee and Honey Co., Geo. D. Mitchell, Mgr., 1716 Rose St., Berkeley, Calif.

BEES and queens for sale. The 1928 bee season is near at hand. Look out for your wants and let us figure with you. We have some of the best bees and queens that are raised. Prices are right. Queen bees $1.00 each; $10.00 per dozen; $70.00 per hundred. One pound of bees with queen, $2.75; two pounds of bees with young queen, $4.50. All charges paid. Graydon Bros., Greenville, Ala., Route No. 4.

FOR satisfaction order your package bees and queens from P. M. Williams. They are bred for honey production, packed right and will reach you in good condition. Two-pound packages of young bees with select untested Italian queens, one to four, $3.50; five to nine, $3.40; ten or more, $3.25. Select untested Italian queens $1.00 each, six for $5.50, dozen $10.00. Health certificate with every shipment. Satisfaction guaranteed. P. M. Williams, Mt. Willing, Ala.

PACKAGE BEES—Hardy Northern. Van's Honey Farms, Hebron, Indiana.

CAUCASIANS—If they are Quinn's, they are pure; they hold the world's record for both comb and extracted honey. Most gentle of all bees. Carniolans in their purity, Italians that are bred, not merely raised. Prices: Untested, $1.50; select untested, $2.00. Tested, $2.50; select tested, $3.00. Ten per cent off on lots of one dozen. Special prices on lots of 100, 500, 1999. Are you interested in a long tongue reach? If so, try Quinn's bees. Charles W. Quinn, C. E., the breeder of queens, Box 14, Englewood, Fla.

AMERICAN BEAUTY Italian bees and queens. Two-pound combless package and queen, $4.00 each. Special, 2½ lbs. bees on frame sealed brood and honey with queens introduced and laying enroute, $4.75. Health certificate and satisfaction guaranteed. Tupelo Apiaries, J. L. Morgan, Prop., Apalachicola, Fla.

GOLDEN THREE-BANDED and Carniolan queens. Tested, $1.00; untested, 75c each. Bees in 1-pound package, $1.50; 2 pounds, $2.50; 3 pounds, $3.25. Safe delivery guaranteed. C. B. Bankston,
Box 65, Buffalo, Leon Co., Texas.

GOLDEN Italian queens that produce golden bees, very gentle, good honey gatherers. State inspected. Safe arrival, satisfaction guaranteed. Ready now. Tested, $1.50; select tested, $2.50. Untested, about May 1, $1.00; six for $5.40; twelve or more, 80 cents each. D. T. Gaster, Randleman, N. C., Route 2.

WANTED—To book orders from 300 to 500 packages pure Italian bees and queens for April and May delivery.
O. P. Hendrix, West Point, Miss.

PACKAGE bees and queens. Pure Italian stock. Reduced prices for May delivery. The Crowville Apiaries, Crowville, La.

LISTEN—If you wish to purchase high grade Italian queens, write for circular describing our famous Carolina queens. Every queen guaranteed to give satisfaction. One to five, $1.00 each; six to twenty-four, 85c; twenty-five to fifty, 75c. Carolina Bee Co., W. O. Curtis, Mgr., Graham, N. C.

OUR weights hold out. R. V. Stearns, Brady, Texas.

THE Peerless Strain—Vigorous, gentle Italian. 1928. One 2-lb. package with young queen, $3.75; from 10 up, $3.50 each. One 3-lb. package with young queen, $5.00; from 10 up, $4.50 each. One 4-lb. package with young queen, $6.00; from 10 up, $5.50 each. Packages are shipped combless with sufficient feed for transit. If you wish to have your bees shipped on comb, add 25 cents for each comb. A 2-frame nucleus with young queen, $4.25; from 5 up, $4.00 each. A 2-frame nucleus with two pounds of bees and queen, $6.00 Special: For those who have only a short time for the bees to build up before the main honeyflow, a 4-lb. package with two good frames of brood and young queen, $7.00; five packages, $32.50. Order now; you will be pleased. The Peerless Apiaries, Box 54, Marksville, La. Rev. John P. Cooney, Prop.

WILL exchange package bees for good real estate, or anything valuable. Van's Honey Farms, Hebron, Indiana.

GOLDEN UNTESTED QUEENS—Gentle and good honey gatherers as can be found, $2.00 each. Tested, $4.00 each. Best breeders, $20.00. Over thirty years a golden Italian breeder.
J. B. Brockwell, Barnetts, Va.

FOR SALE—Italian bees in 2-pound packages with queens, $3.00 each. Health certificate with each shipment. Satisfaction guaranteed. Write me.
J. L. Leath, Corinth, Miss.

NEW
LOW
PRICES

New low prices on packages and nuclei bees, from one package to several thousand, very cheap prices. Please let us quote you prices before purchasing your bees. We believe that we can save you money and that you will be more than pleased for the following reason: We will ship you absolutely FREE with each package you order from us this month a one-frame nucleus. No drones. Overweight allowed for shrinkage. Young, choice queens. Safe delivery, satisfaction, no diseases guaranteed. First-class references furnished from customers all over the United States, Canada and even Cuba. We are one of the largest and oldest shippers in Louisiana. We have a good offer for several large buyers. Write or wire us at our expense for further particulars. M. J. Voinche, Bunkie, La.

WE ship on time. R. V. Stearns, Brady, Texas.

PACKAGE bees and queens. Untested daughters of Honey Girl breeder. Charles Wallace, Box 44, Rt. 1, Glenn, Calif.

PACKAGE BEES—Hardy Northern. Van's Honey Farms, Hebron, Indiana.

POUND package bees with 1928 Italian queens. Two-pound packages, $3.50; three-pound packages, $4.50. Satisfaction guaranteed.
Overbey Apiaries, Leonville, La.

LEATHER COLORED ITALIAN QUEENS—$2.00; after June 1, $1.00. Tested, $2.00.
A. W. Yates,
15 Chapman St., Hartford, Conn.

GOLDEN Italian queens and nuclei (or package bees) for 1928. The big, bright, hustling kind (the kind that get the honey). Satisfied customers everywhere. Untested, $1.00 each; 6 for $5.00; 12, $10.00; 100, $75.00. Tested, $2.00 each. Two-frame nuclei or two-pound package with queens, $4.50 each; ten or more, $4.00 each. Safe arrival guaranteed. Health certificate furnished. E. F. Day, Honoraville, Ala.

EARLY package bees and select young laying Italian queens. The kind that will pay you a profit the first season. Attractive prices on orders placed in advance. Our northern location will save you both time and express charges. Let us quote you on any size order, either f. o. b. here or delivered to your station. We guarantee safe arrival and delivery on time. Circular free.
J. E. Wing, Cottonwood, California.

IT will pay you to see my display on page 166. Jes Dalton.

HIGHEST grade Italian queens—Tested, $1.50; untested, 75 cents. Package bees, one pound, $1.50; two pounds, $2.50; three pounds, $3.25. Have had no disease. State inspection certificate with each shipment. Safe delivery guaranteed.
T. L. Davis, Buffalo, Leon Co., Texas.

TRY our high class queens and get the honey. We sell only the best selected Italians, guarantee safe arrival and complete satisfaction in every way. Our queens are personally reared and we want you to try them. Prices are $1.00 each; 6 for $5.50; 25 at 80c each, and 50 or more 75c each.
Salida Apiaries,
T. L. Nicolayson, Prop.
Salida, Calif.

THRIFTY CAUCASIANS—Booking orders for three-frame nuclei, also queens for May delivery. Yard inspected regularly for protection of diseases.
Peter Schaffhauser, Havelock, N. C.

PACKAGE BEES—See our ad on page 203 or write for particulars. Louisiana Southern Bee Farm, Baton Rouge, La.

FOR SALE

FOR SALE—Shallow extracting supers with combs. No disease. Certificate furnished. Elmer G. Carr, Pennington, N. J.

FOR SALE—One or a hundred colonies in ten-frame hives with food chamber with honey. Frames drawn from full sheets of foundation. Colonies headed with young queens of J. P. Moore and Jasper Knight stock. Have never had disease in my yards and will guarantee free from disease. Price, $10.00 f. o. b. Bayard, Iowa. Bert Gander.

TWENTY Modified Dadant hives with forty-five extracting supers. Painted. Used one season. Seventy-one dollars for lot, which is less than half price.
J. H. Whiting, Canton, Ill.

WOULD sell one-third or one-half divided or undivided interest in my bee business to good, clean man who is not afraid of hard work in outyards.
J. W. Powell, Mesilla Park, N. M.

FOR SALE—75 stands of bees for 8-10 frames. E. S. Burgess, Tonica, Ill.

FOR SALE—Forty new Modified Dadant hives and wired foundation. Herbert Kietzer, Vernon Center, Minn.

DAHLIAS—Fourteen, all different, $1.50. List of named varieties free. Gladiolus, fifty assorted, $1.00. Postpaid.
Busy Bee Apiaries, Chillicothe, Ill.

THREE HUNDRED pounds of Dadant's medium brood wired foundation for Langstroth frames. Packed in fifty-pound boxes. For sale at less than listed prices. Write for prices delivered to your station.
Longfellow Bros. Hallowell, Maine.

FOR SALE—New Modified Dadant supers, nailed and painted, with wired foundation. William Larsen, Quinnesec, Mich.

FOR SALE—Five colonies bees. Write E. E. Seitz, Glen Rock, Pa.

FOR SALE—About 100 colonies Italian bees; supers; extracting equipment, ten-frame. Supplies new and nearly new, painted; wired foundation. Make an offer.
Irvin Nordgaard, Peterson, Minn.

HANDY three in one feeders. Especially adapted for package bees. Sample, postpaid to third zone, $1.30. Write for circular. W. F. Tilton, 3412 Bales, Kansas City, Mo.

25 NEW ten-frame standard hive bodies for 65c each. One four-frame extractor and other equipment, cheap.
Kermit Trapp, Milbank, S. D.

MY HOME and property for sale: 180 colonies bees, guaranteed disease free; abundance of drawn combs. Splendid wholesale routes. New ton Chevrolet truck. Close to grade and high schools. City light and water, etc., etc. 225 pounds of honey per colony in 1926. Full particulars from owner. Sherman Whitney, Puyallup, Wash.

FOR SALE—500 colonies bees and equipment for comb, extracted or chunk honey, all in good standard eight-frame hives. Located in heart of sweet clover district of San Luis Valley of Colorado.
L. W. Howsam, La Jara, Colo.

HUBAM $12.50 per bushel; white sweet clover $6.00. Recleaned and scarified. P. Petersen, Kimballton, Iowa.

200 COLONIES of bees and equipment, a few eight-frame colonies, rest in ten-frame; four super equipment, about eighty extracting supers, two-frame extractor. White clover prospect fine. Disease free.
Olan Tackaberry, Cantril, Iowa.

FOR SALE—20 colonies of bees with equipment, in A-1 shape, at a reasonable price. Domenick Tarro, Taylorville, Ill.

FOR SALE—160 colonies bees in 8- and 10-frame hives, with equipment. Guaranteed healthy and in good condition.
Frank Schwab, Blanca, Colo.

FOR SALE—Eighty colonies of Italian bees in eight- and ten-frame hives. Guaranteed healthy. Anthony P. Kilmalis, Hoosick Falls, N. Y.

FOR SALE—Foundation, bee brushes, comb, hives, cartons, feeders, nailed and painted bodies, bottoms, covers and bodies, veils, sections, a big assortment of frames, excluders, comb and extracting supers k. d., and many other items in good usable condition. Reason for selling items, no longer listed in our catalog. Prices the lowest anywhere for the value. You can address G. B. Lewis Company at Watertown, Wisconsin; Albany, New York; Lynchburg, Virginia; Texarkana, Arkansas, or Sioux City, Iowa.

TRY Pinard's labor-saving nailless queenbee shipping cage. Send for circulars. A. B. Pinard, R. 1, Box 1, San Jose, Calif.

COMB HONEY producers using a Rauchfuss combined section press and foundation fastener, write me for free information regarding improvement on your machine guaranteed to enable you to fold more sections per hour, do better work, and keep sections from being spotted up with melted wax which runs down from the hot-plate. C. Holm, Prop. Base Line Bee Farm, Genoa, Illinois.

FOR SALE—100 colonies of bees, together with equipment for 200 more. Unexcelled location for 1,000 colonies. Standard ten-frame. Sell all or part.
B. F. Kindig, East Lansing, Mich.

FOR SALE—300 stands of bees just requeened, choice three-band Italians, two supers to each hive. No disease; inspector's certificate. Excellent orange and sage locations. Portable extracting house and tanks. Low cash price. Address Robert E. Miller, Rialto, Calif.

BEST quality pine Hoffman self-spacing frames, $42 per 1,000. Best dovetailed hive bodies, 25 or more, 60c each. Let us quote you on other items you will need. The Stover Apiaries, Tibbee Station, Miss.

FOR SALE—We are constantly accumulating bee supplies, slightly shopworn, odd sized, surpluses, etc., which we desire to dispose of and on which we can quote you bargain prices. Write for complete list of our bargain material. We can save you money on items you may desire from it.
Dadant & Sons, Hamilton, Illinois.

HONEY AND BEESWAX

IN MARKET for less carload lots white or extra light amber honeys. Write how packed, quantity for sale and lowest price, sending samples to Arthur H. Hoffman, Inc., Richmond Hill, N. Y.

STURDEVANT, St. Paul, Nebraska. Finest quality clover honey.

WANTED—Package bees, in exchange for white clover extracted honey.
A. G. Kuersten, Burlington, Iowa.

FOR SALE—450 five-pound pails clover honey, 50c each, packed 24 pails to case. William G. Blake, Port Huron, Mich.

FOR SALE—Light amber fall honey in 60-pound cans, any quantity. Sample 15c. E. S. Miller, Valparaiso, Ind.

PARTIES wishing extra fine honey reasonable, any time, write Lee Horning, a Producer, Morirson, Ill.

COMB and extracted, new crop, ton lots. State price and full particulars. J. Curtis Alexander, R. 1, Asheville, N. C.

WANTED—Beeswax, old combs, cappings, slumgum. Write for shipping tags. "Don't pass the buck." Get your foundation and supplies right.
The Carl F. Buck Co., Walla Walla, Wash.

NUMBER ONE clover honey, white, in 60's. State quantity wanted. Sample 15c.
Edw. Hassinger, Jr., Greenville, Wis.

CLOVER and amber extracted and comb honey for sale. W. C. Moon, Henry, Ill.

WINKLER'S light amber honey at 9c pound. Winkler Honey Co., Joliet, Ill.

FOR SALE—Fancy white clover honey in new 60-lb. cans at 9c per pound; twelve five-pound pails, $7.50. Discount on large lots. Joseph H. Hoehn, Ottoville, Ohio.

FOR SALE—5,000 pounds extracted clover honey, white and light amber, in 60-pound cans, crystallized.
Frank Schwab, Blanca, Colo.

WHITE CLOVER in 60-lb. cans, two to case, 9c per pound. Also light amber, 7½c. Sample 15c.
Sylvester Legat, Spring Valley, Ill.

MICHIGAN'S best extracted honey; clover, raspberry, milkweed. In 60-lb. cans and other packages, quantities to suit, at prices within the market.
A. G. Woodman, Grand Rapids, Mich.

WHITE CLOVER HONEY—Extracted, comb and chunk honey. Prices on request. Sample 15c.
F. W. Summerfield, Waterville, O.

EXCEPTIONAL quality clover honey. Clear, white, thick, mild and delicious. Fast retail seller. Inquire price.
Newman I. Lyle, Sheldon, Iowa.

FOR SALE—Finest quality white clover honey in new 60-pound cans.
Martin Carsmoe, Ruthven, Iowa.

FOR SALE—White clover honey in 60-lb. cans. None finer. Satisfaction guaranteed. J. F. Moore, Tiffin, Ohio.

WANTED—A car or less quantity of white honey in sixty-pound cans. Mail sample and quote lowest cash price for same; also send for my cut price circular on cans and pails for honey containers.
J. S. Bulkley, Birmingham, Mich.

FOR SALE—Large stock first-class white clover, sweet clover, basswood, light amber and buckwheat extracted honey. Producers who need more, dealers and solicitors should write us about their wants.
A. I. Root Co. of Chicago,
224 W. Huron St., Chicago, Ill.

EXTRA fine, well refined clover honey in 60-lb. cans. Prices on request.
E. J. Stahlman, Grover Hill, Ohio.

FANCY white tupelo extracted and bulk comb, packed in five-pound tin.
J. L. Morgan, Tupelo Apiaries,
Apalachicola, Fla.

FOR SALE—Northern white, extracted and comb honey.
M. W. Cousineau, Moorhead, Minn.

EXTRACTED HONEY—Extra fancy, white clover; 60 lb., 13c pound; six 10-lb. pails, $9.00; twelve 5-lb. pails, $9.60.
Kalona Honey Co., Kalona, Iowa.

FOR SALE—No. 1 white comb, $4.50 per case, 24 sections to case, six cases to carrier. Clover extracted, 10c pound; dark, 7c. Two 60-lb cans to case.
H. G. Quirin, Bellevue, Ohio.

HONEY FOR SALE—In 60-lb. tins. White clover at 12c lb.; white sage at 12c lb.; white orange at 14c lb.; extra L. A. sage at 11c lb.; Hoffman & Hauck, Inc.,
Ozone Park, New York.

FOR SALE—Our own crop white clover and amber fall honey in barrels and cans. State quantity wanted and we will quote prices. Samples on request.
Dadant & Sons, Hamilton, Illinois.

HONEY FOR SALE—Any kind, any quantity. The John G. Paton Co.,
217 Broadway, New York.

SHALLOW frame white comb honey and white extracted honey.
The Colorado Honey Prod. Ass'n,
Denver, Colo.

SUPPLIES

COMPLETE hives, hive bodies, bottom boards, covers, frames, all kinds. All new and made of the best material. Dirt cheap. Send list of what you need. The Stover Apiaries, Tibbee Station, Miss.

HIVES, covers, bottoms and frames, standard or made to your order. Write for prices. High Line Apiaries, Glen Flora, Wis.

COMB foundation, bee supplies manufactured. V. Soharev, Slocan, B. C.

ROBINSON'S comb foundation will please the bees, and the price will please the beekeeper. Wax worked at lowest rates.
E. S. Robinson, Mayville, N. Y.

"BEEWARE" and Dadant's Wired Foundation for the Northwest. Catalog prices. F. O. B. Fromberg, Montana. Beeswax wanted. Write for prices.
B. F. Smith, Jr., Fromberg, Mont.

BEST QUALITY bee supplies, attractive prices, prompt shipment. Illustrated catalog on request. We buy beeswax at all times and remit promptly.
The Colorado Honey Producers' Ass'n,
Denver, Colo.

FOR SALE—Good second-hand 60-lb cans, two cans to a case, boxed. We have large stocks of these on hand. Please write for prices if interested. We are offering only good cans and good cases.
C. H. W. Weber & Co., Cincinnati, O.

MISCELLANEOUS

HAVE YOU any Bee Journals or bee books published previous to 1900 you wish to dispose of? If so send us a list.
American Bee Journal, Hamilton, Ill.

MAKE queen introduction sure. One Safin cage by mail, 25c; 5 for $1.00.
Allen Latham, Norwichtown, Conn.

YOU can read in either English or French the report of the Seventh International Congress of Beekeepers held at Quebec September 1-4, 1924. Not more than a dozen copies left. Orders filled in rotation. Postpaid, $2.25. American Bee Journal.

THE DADANT SYSTEM IN ITALIAN—The "Dadant System of Beekeeping" is now published in Italian, "Il Systema d'Apicoltura Dadant." Send orders to the American Bee Journal. Price $1.00.

GLEANINGS IN BEE CULTURE, published at Medina, Ohio, is the most carefully edited bee journal in the world. Its editor-in-chief is George S. Demuth. Its field editor is E. R. Root. Ask for sample copy.

WESTERN HONEY BEE, 2823 E. 4th St., Los Angeles, Calif., published by Western beekeepers, where commercial honey production is farther advanced than in any other section of the world. $1.00 per year. Send for sample copy.

WANTED

WANTED—Experienced helper to work several hundred colonies on share basis.
Mathilde Candler, Cassville, Wis.

YOUNG man, 24, willing, upright, dairy farm experience, interested in bees, desires work on progressive dairy farm with apiary; quiet family.
Milton Benner, Osseo, Minn.

WANTED—Fifty or more ten-frame beeway comb honey supers. Frank Roorda, R. 2, Box 53, Wheatfield, Ind.

WANTED—Ambitious young man, to work in large apiary for the season 1928. State wages expected, and age.
Earl L. Baker, Lake City, Mich.

WANTED—Experienced, able-bodied man, for extracted honey. State age, experience and wages expected.
A. E. Schellhorn, Huntley, Mont.

COMPETENT BEE MAN, capable of taking charge of 1000 swarms of bees located in several outapiaries if necessary. Excellent opportunity for the right man. State experience and wages. Year round position.
J. E. Crane & Son Middlebury, Vt.

WANTED—Ten-frame equipment, power extractor, pump, 100 colonies of bees. Give lowest cash price and full description.
Brookside Apiaries, Ruthton, Minn.

WANTED—Man for coming season. Must be able to take charge at times. Middle-aged man with family and experience in Southwest preferred. Would lease few hundred colonies to right party.
Thos. L. Gunter, Belen, New Mexico.

WANTED—Position as helper with large producer for coming season. Age 19.
Everett Bliss, Bancroft, Mich.

AN experienced man for extracted honey. State experience and wages expected. The Rocky Mountain Bee Company, Box 1319, Billings, Mont.

WANTED—One experienced beekeeper and one helper for 1928 season. Give full information and wages expected.
W. J. Forehand, Fort Deposit, Ala.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendering.
Fred W. Muth Co.,
204 Walnut St., Cincinnati, Ohio.

RABBITS

RABBITS—Make big profits with Chinchilla rabbits. Real money makers. Write for facts. 824 Conrad's Ranch, Denver, Colo.

Meetings and Events

Michigan Meetings

Two very good bee meetings were held in Michigan the past winter. The first was at the Woodman factory in Grand Rapids. This was a local meeting attended by bee men of the west side of the state. The convention of the state association was held at the college in East Lansing.

Two things were of outstanding interest at these meetings—the work of Professor Hootman in the use of bees to secure better pollination in Michigan orchards and the work of Inspector Krebs in cleaning up disease.

Both meetings were well attended and both had interesting programs with a variety of interest.

North Dakota Summer Meet

Lisbon has been announced as the place of the summer meeting of North Dakota bee men this year. The date will probably be during the week of June 25, according to the Association News-Letter.

PACKAGE BEES AND QUEENS
1500 strong healthy colonies to draw from.
Italian Queens $1.00 each
Packages $1.00 lb.
Discount on Quantity
R. E. LaBARRE, Box 1042, Tulare, Calif.

THE HONEYBEE
Written originally by L. L. Langstroth, rewritten by Charles Dadant and C. P. Dadant, is now in its twenty-second edition. Successful beekeepers use this book as an aid in their daily problems. The teachings of Langstroth and the experiences of the Dadants compiled in this book make it a volume of constant reference.
Price $2.50
American Bee Journal
Hamilton, Illinois

HODGSON'S RADIAL HONEY EXTRACTOR

HAS BEEN A SUCCESS FROM THE FIRST

The man who bought the second machine wrote us recently:

"Might say that the Radial Extractor is still running fine. Have extracted around six tons already this season, of mostly pretty cold honey, and have only broken one comb."

Manufactured by

S. P. HODGSON & SONS
NEW WESTMINSTER,
British Columbia, Canada

To New York State Beekeepers

The bees will soon be humming and all the cares and troubles of the past winter will be forgotten. You will go through each hive and perhaps find them just a little stronger than you thought. Then you start thinking about supplies. THAT'S OUR BUSINESS — OUR WORRY. You know you can get what you want when you want it from SYRACUSE, ROOT'S GOODS, at factory prices—no extra cost for real SERVICE.

And, by the way, when you start cleaning house save all your old combs and scraps of wax. Send them to us to be rendered into beeswax. You'll be surprised at the results.

A. I. Root Co. of Syracuse

124 WILLIAMS STREET,
SYRACUSE, N. Y.,

Serves You Best

ITALIAN BEES AND QUEENS

Let us book your order for 1928

2-pound package, $3.50
3-pound package, 4.25

F. O. B. Baton Rouge

LOUISIANA SOUTHERN BEE FARM
Route 2
Baton Rouge, La.

George L. Lott **J. W. Newton**

STATEMENT OF OWNERSHIP

Statement of the ownership, management, circulation, etc., required by the Act of Congress of August 24, 1912, of American Bee Journal, published monthly at Hamilton, Illinois, for April, 1928:

STATE OF ILLINOIS, } ss.
County of Hancock, }

Before me, a notary public in and for the state and county aforesaid, personally appeared M. G. Dadant, who, having been duly sworn according to law, deposes and says that he is the business manager of the American Bee Journal, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, rendered by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor and business manager are:

Publishers, American Bee Journal, Hamilton, Ill.

Editor, C. P. Dadant, Hamilton, Ill.

Managing editor, Frank C. Pellett, Hamilton Ill.

Business manager, M. G. Dadant, Hamilton, Ill.

2. That owners are:

C. P. Dadant, Hamilton, Ill.
H. C. Dadant, Hamilton, Ill.
V. M. Dadant, Hamilton, Ill.
C. S. Dadant, Hamilton, Ill.
L. C. Dadant, Hamilton, Ill.
M. G. Dadant, Hamilton, Ill.
Leon Saugier, Hamilton, Ill.
Joseph Saugier, Hamilton, Ill.

That the known bondholders, mortgagees and other security holders owning or holding one per cent or more of the total amount of bonds, mortgages or other securities are: None.

(Signed) M. G. DADANT,
Business Manager American Bee Journal.

Sworn to and subscribed before me this first day of April, 1928.

BIRDIE ASH,
Notary Public.

My commission expires March 6, 1930.

BOOKING ORDERS

for high-grade three-banded Italian bees and queens: 2-lb. package with select untested queen, $4.50; discount on quantity. Select untested, $1.00, $10.00 per dozen; select tested queen, $1.50. Inspector's certificate with each.

J. ALLEN, Catherine, Alabama

Achord Combless Packages and Queens

Soon make colonies you will be proud to own

We produce and ship only the best of pure three-banded Italians. We give you more than full weight of healthy, young bees.

Two-pound packages with select 1928 laying queens, $4.25 each; five or more, $4.00 each.

Three-pound packages with select 1928 laying queens, $5.25 each; five or more, $5.00 each.

If packages are wanted without queens, deduct $1.00 from the price of each.

Shipments will start early in April and will have inspection certificates and all papers necessary to deliver them at destination without delay.

SELECT 1928 LAYING QUEENS $1 EA.
ANY NUMBER

Tested queens, $1.75 each

Select tested prospective breeding queens, $2.50 each

We have been shipping bees and queens for many years and can give you the very best in bees, queens and service. Write us your needs for the new year.

W. D. ACHORD, Fitzpatrick, Alabama

ANNOUNCEMENT

We are booked to capacity on package bees for the season, and for queens until May 20.

Thanks to all, and best wishes.

BOLLING BEE CO.
BOLLING, ALA.

BRAZOS VALLEY APIARIES
CAMERON, TEXAS

BEES AND QUEENS

BRAZOS VALLEY APIARIES
CAMERON, TEXAS

I am going to offer about 500 packages of Italian bees with young laying queens at the following bargain prices for April and May delivery:

1	2-lb. package with Italian queen	$ 3.50	1	3-lb. package with Italian queen	$ 4.25
5	2-lb. packages with Italian queens	16.25	5	3-lb. packages with Italian queens	20.50
10	2-lb. packages with Italian queens	30.00	10	3-lb. packages with Italani queens	40.00
25	2-lb. packages with Italian queens	73.75	25	3-lb. packages with Italian queens	97.50
50	2-lb. packages with Italian queens	145.00	50	3-lb. packages with Italian queens	190.00

Remember, a young three-band or leather colored Italian queen is included with each package without extra cost. I guarantee safe delivery, and will replace, without quibbling, any shipment that may be lost or damaged in transit. This is the very best strain of Italians that money can buy and that I can produce, and there is none better. I have been shipping bees in large quantities all over the U. S. and Canada for many years and have reached almost the 100 per cent mark of success in safe delivery. Orders will be filled promptly on the day wanted, with absolute full weight, and drones screened out. We have never had a case of foulbrood in this county, and a certificate of health will accompany each shipment. Ten per cent books your order, or you may order direct from this ad. If I should be sold out and unable to make shipment, your money will be returned in the first mail after being received.

References: Citizens National Bank, of this place

H. E. GRAHAM, Cameron, Texas, P. O. Box 735

THE BROCK STORE

J. CHARLES BROCK, Proprietor

138 North Second Street, Decatur, Indiana

Authorized Distributor of

LEWIS BEEWARE and DADANT'S FOUNDATION

Save time and freight by buying your supplies from DECATUR, INDIANA, located on the "Erie," "Nickel Plate" and "Pennsylvania" lines.

Cheap and quick shipments made by parcel post. Second zone includes the following cities located in five states:

Grand Rapids, Lansing, Detroit, Mich.; Akron, Zanesville, Gloucester, Chillicothe, Cincinnati, Ohio; Corinth, Kentucky; Danville, Illinois; Terre Haute, Crown Point and Gary, Indiana.

Get our prices on

HART'S HONEY JARS

We carry all sizes, plain and fluted

Subject to stock on hand, all QUINBY (Jumbo) hive bodies and frames will be closed out at prices of regular ten-frame standard, as we wish to discontinue this size.

We also have a close-out on ten-frame Wood and Zinc queen excluders.

Hummer Package Bees For 1928

We ship overweight packages on sugar syrup. We get them out when wanted. Only young, healthy, vigorous bees and queens shipped. We ship in light, strong cages that fit in the hive. Safe arrival and satisfaction guaranteed. We book without deposit.

NOTE THE LOW PRICES

Two-pound package with select untested queen—1 to 9, $3.50 each; 10 to 24, $3.25 each; 25 or more, $3.00 each.

Three-pound package with select untested queen—1 to 9, $4.50 each; 10 to 24, $4.25 each; 25 or more, $4.00 each.

Order from us and you will not be disappointed. In the bee business in Mississippi since 1892.

Send for Circular

Geo. A. Hummer & Son

Prairie Point, Miss.

VICTOR QUALITY

ITALIAN BEES AND QUEENS

Established 1883 — 45 years on the job and I know my stuff

W. Z. Hutchison judged my bees the best Italians at the Pan-American Exhibition. T. W. Burleson judged bees I furnished a customer for his exhibit at the State Fair of Texas, Dallas, FIRST.

I could furnish a book of testimonials showing average yields of total number of packages shipped as high as 285 pounds.

All queens reared under my personal supervision from Victor Quality Breeders, some of which have been tested in North Dakota and returned with the request, "Raise me some queens from her."

The Queen Is the Hub of the Colony

Prices — Two-pound package with untested queen: 1-10, $3.75; 11-25, $3.60; 26-50, $3.50; 51 or more, $3.25. Untested queens: 1-10, $1.00; 11-25, 90c; 26-50, 85c; 51 and over, 80c. Tested queens, $1.75. Breeding queens, $10.00.

Certificate with each shipment. No deposit required. Cash must be sent before shipping date.

My Motto — You must be satisfied

W. O. VICTOR

Queen Specialist **Uvalde, Texas**

NEBRASKA
IOWA
KANSAS
MINNESOTA
COLORADO
SOUTH DAKOTA
WYOMING

Beekeepers be sure and get our 1928 catalog. Early order discounts on your bee supply orders.

Leahy's Standard Bee Supplies
Dadant's Wired Foundation
Honey Containers

W. R. PERRY CO.

1209 Howard Street
OMAHA, NEBRASKA

Dadant's Plain Foundation

For the Man Who Wires His Own Frames

Dadant's Plain foundation is made only of the **purest beeswax;** refined without chemicals and retaining the sweet smell of the hive and honey that bees accept.

Comb foundation is made of sheets of wax pressed between metal mills, in exact reproduction of the base of bees' comb. The sheets are just right to fit the frames used in the hives.

There is absolutely no **substitute nor shoddy in it.** Each sheet is inspected and carefully wrapped to reach you in perfect condition, ready for use.

FOUNDATION MANUFACTURERS

DADANT AND SONS
WIRED — PLAIN — SURPLUS

HAMILTON, ILLINOIS

KNIGHT'S Package Bees and Queens

Three-banded leather colored Italians, the best honey gatherers, gentle and prolific. Young bees and full weight, shipped on sugar syrup, and on the day you name.

DELIVERED PRICES. PARCEL POST OR PREPAID EXPRESS.

(Write for prepaid prices to Canada)

1-lb. package, including young laying queen	$ 3.25
2-lb. package, including young laying queen	4.50
2½-lb. package, including young laying queen	5.00
3-lb. package, including young laying queen	5.50

Ten packages, either size, 25c less each. Queenless packages, $1.00 less

QUEEN PRICES:

Select (one grade only): One, $1.00; ten, $9.00; twenty-five or more, 85c each
Tested queens, last fall rearing, $1.75.

Should you find a queenless colony this spring, send to me for a young queen to save them. A colony headed with one of my queens produced nine Modified Dadant Supers extracted honey last season. Excellent reports of my queens are received from all parts of the United States and Canada. Safe arrival bees and queens, pure mating and satisfaction guaranteed. Furthermore, I make good my guarantee. Inquiry as to my business and financial responsibility is invited. No disease. Health certificate and all necessary papers accompany shipment. Will begin shipping around April 1.

JASPER KNIGHT, Hayneville, Alabama

JUST ARRIVED

A CAR LOAD OF SHALLOW SUPERS

Made of Clear White Sugar Pine

Finest on the Market — Dovetailed — Perfect Cut

Standard Size 10 Frame, $4.30 per crate of 5, complete with Frames, Tin Rabbets and Nails

10 Frame Hive Stands with Long Runways $1.75 per crate of 5

8 Frame Hives Complete with Top, Bottoms, Self-spacing Frame, Tin Rabbets and Nails $1.75 each (slightly soiled).

ST. LOUIS APIARY SUPPLY CO.

Wholesale and Retail Distributors of Apiary Products

MANUFACTURED BY THE

DIAMOND MATCH COMPANY

308 COMMERCIAL BLDG. ST. LOUIS, MO.

HIGH GRADE ITALIAN QUEENS

HEALTH - CERTIFIED
Three - Banded Only

Everyone of them carefully selected. Safe arrival and satisfaction guaranteed. 1, $1.00; 12, $10.00; 100, $75.00. Certificate of inspection with every shipment.

URIAH APIARIES, Box A Uriah, Alabama, U. S. A.

NORMAN BROS.

QUEENS & BEES
PRICES & SERVICE

HAVE SATISFIED THOUSANDS OF BEEKEEPERS

Why not let NORMAN BROS. queens and bees, prices and service satisfy you? We guarantee pure mating, safe arrival, free from disease and satisfaction in U. S. A. and Canada, and health certificate with each shipment. Write for prices on package bees.

	1 to 5	6-11	12-24	50-100
Untested queens	$ .80	$ .75	$ .70	$ .65 each
Select untested	.90	.85	.80	.75 each
Tested queens	1.25	1.15	1.00 each	
Select tested	1.50			

NORMAN BROS. APIARIES, Naftel, Ala.

DR. GUY A. SHAW **QUEEN BREEDERS** HY H. RAMSEY

WE OFFER THE REAL SHAW LINE-BRED ITALIAN QUEENS AND BEES

HONEY PRODUCERS

Queens large and prolific, bees gentle and energetic

We guarantee all queens purely mated, safe arrival and satisfaction

Queens $1.00 each. Ten per cent discount in lots of ten or over. Bees—Three-pound package, $4.50; two-pound package, $3.50, with queens. Ten per cent discount in lots of twenty-five or over.

SHAW & RAMSEY, Loreauville, La.

Combless Packages Italian Bees

The very best that money can buy

No disease, no drones, extra weight, shipped when you want them and fed while in transit on the best sugar syrup

Motto: Your money's worth or money back

T. W. BURLESON Waxahachie, Texas



SAVE TIME—SAVE WORRY

DADANT'S WIRED FOUNDATION

Can be nailed into Lewis Slotted Bottombar Frames in a jiffy. And such wonderful combs!

Sold by all dealers in Lewis Beeware and Dadant's Foundation



PURE ITALIAN QUEENS AND BEES

My business is to produce and sell the best possible stock
Prompt shipment, safe arrival, and full satisfaction guaranteed

PRICES

Two-pound Packages with young LAYING queens:
1 to 9, each, $3.40; 10 to 24, each, $3.00; 25 to 100, each, $2.75
Three-pound Packages with young LAYING queens:
1 to 9, each, $4.40; 10 to 24, each, $4.00; 25 to 100, each, $3.75

Special Prices on Large Shipments

Young laying queens. 1 to 9, $1.00; 10 or more, 90c each
Prices quoted for queens are in effect from April 1 to June 15

Terms—10 per cent with order; balance before shipment
Reference—Bank of Northern California, Redding, California

J. W. Di LULLO, Anderson, Calif.

APRIL QUEENS

Three-Band Hustlers that get the Honey

NOW READY

Good untested, $1.00 each; 25 for 90c each; 50 for 85c each.

Tested, $1.75 each.

Extra select tested, $3.00 each.

D. W. Howell, Shellman, Georgia

OLD RELIABLE

Mondeng for Hives, Supers, Sections, Frames

and all other bee supplies at factory prices. Send in your list now for special quoting if you want to save money.

Charles Mondeng Company

159 Cedar Lake Road

Minneapolis, Minnesota

SHAW'S

BEES AND QUEENS

Are Seldom Equaled and Never Surpassed

No disease here—never has been. I ship in light cages on sugar syrup. All packages 10 to 20 per cent overweight when shipped. Young three-band Italian bees and queens. I guarantee all queens to be purely mated. I also guarantee you will get them when you want them. If there are any losses, I assume them and give prompt replacement or refund. Your order booked without deposit.

PRICES

Two-pound pkgs. with young queens: 1 to 24, $3.50; 25 to 49, $3.35; 50 to 100, $3.10.

Three-pound pkgs. with young queens: 1 to 24, $4.50; 25 to 49, $4.35; 50 to 100, $4.10.

Queens, as good as the best: 1 to 9, $1.00; 10 to 24, 95c; 24 to 49, 90c; 50 to 100, 85c each.

A. E. SHAW

SHANNON, MISS

MIDDLE TENNESSEE QUEENS

SIXTEEN YEARS EXPERIENCE WITH BEES

Eleven years a queen breeder
Three-banded Italians

	1	12	100
Untested	$1.00	$11.00	$ 80.00
Select Untested	1.25	14.00	105.00
Tested	1.75	18.50	145.00
Select Tested	2.00	22.00	170.00

Day old queens 50c each

We guarantee satisfaction and safe arrival in U. S. and Canada

MIDDLE TENNESSEE APIARIES

LEO C. PARKS, Manager

SPRING HILL, TENNESSEE



CAUCASIANS CARNIOLANS PACKAGE BEES

Beekeepers: Do you want thriftier, more hardy bees? Do you want bees that winter better, that are gentler and give larger average yields of honey per colony? If you do, then try our line of gray bees and queens.

Untested queens, $1.25 each; six, $7.00; twelve or more, $1.00 each.

Two-pound packages with queens, one to five, $4.00; five to nineteen, $3.50; twenty or more, $3.25 each. No disease and delivery guaranteed.

Write for circular which gives full particulars of our bees and queens.

W. A. HOLMBERG, Turlock, Calif.

F. J. RETTIG & SONS

BEEKEEPERS' SUPPLIES

455-485 W. Canal St., Wabash, Ind.

5 lbs. Medium Brood Foundation	$3.50
5 lbs. Thin surplus	3.85
5 Ten-frame One-story Hives	10.00
100 Hoffman Frames	4.75
500 4¼x4¼x1⅞ No. 1 Sections	4.75
2-Fr. Ball-bearing Revers. Ext'r	23.50
5 Eight- or Ten-frame Escape Boards	1.15
5 Eight- or Ten-frame Supers fitted for sections or frames	3.75
5 Tops, eight- or ten-frame, wood	2.95
5 Bottoms, eight- or ten-frame	2.90
10-Inch Hive Tool	.50
100 Scalloped Wood Separators	1.15

Write for our 1928 catalogue and get all our prices. Send in your old comb and cappings; we will render them for 5c a pound and pay you the highest market price for your wax or any you may have.

PACKAGE BEES

Shipped by express on sugar syrup without comb.

(Shipped on comb by request only.)

No disease and safe arrival guaranteed.

Health certificate attached. Twenty per cent with order.

With select untested Italian queen:

1 to 10 2-lb. pkgs. ..... $3.75 each
10 to 25 2-lb. pkgs. ..... 3.65 each
25 or more 2-lb. pkgs..... 3.50 each

For 3-lb. pkgs. add $1.00 to each package above. Without queen, deduct $1.00 each.

JOHN A. WILLIAMS
Box 178, Oakdale, Louisiana

GOLDEN ITALIAN QUEENS

Only One Grade, Select. Safe Arrival and Satisfaction Guaranteed.
Untested $1.00; 6 for $5.00; 12 for $10 00

E. A. SIMMONS, GREENVILLE, ALABAMA

YANCEY HUSTLERS

A strain of Three-band Italians with a record for honey production in every section of the U. S. and Canada

Quick Service and Satisfaction Guaranteed

Package bees with select untested queens:

	1 to 9	10 to 24	25 to 49	50 or more
2-lb.	$3.75	$3.50	$3.30	$3.10
3-lb.	4.75	4.50	4.30	4.10

Twenty-five per cent overweight in every package; practically all young bees; no drones. Descriptive circular on request.

Caney Valley Apiaries, Bay City, Texas

PACKAGE BEES

For Making Increase and Replacing Your Winter Loss

With 600 colonies added to our outfit, we are in position to give you better Service and the same Standard Quality that has pleased our customers so far.

COMBLESS PACKAGES with Untested Three-banded Italian Queens, packed full weight, shipped on candy or syrup, f. o. b. shipping point:

2-Pound packages ..... $4.00 each, 5 for $18.75
3-Pound packages ..... 5.00 each, 5 for 23.75

Let us quote you on large shipments, also on two- and three-frame nuclei

INCREASE THE COLONY AVERAGE

by requeening with Hogg's Hi-Grade 3-Banded Queens

Untested, $1.00 each; 12 to 24, 90c; 25 to 50, 80c; 50 or more, 70c each

We guarantee prompt service, safe arrival and satisfaction.
Health certificate with each shipment

JNO. C. HOGG, Andalusia, Alabama

DADANT'S WIRED NON-SAG FOUNDATION

Dadant's Foundation

THE SAVING OF

TIME and MONEY

FOR

Minnesota and Wisconsin Beekeepers

TIME saved in short hauls. We like rush orders, as we buy in car lots and ship same day order is received.

MONEY saved by ordering Lewis and Dadant goods at factory prices from Winona, Graceville, or Brainerd, Minnesota.

Dadant's Wired Foundation and Lewis Slotted Section Bar Frames on hand at all times.

Standard Lumber Company

Winona-Graceville-Brainerd

MINNESOTA

Lewis Beeware



Mention the American Bee Journal When Writing Advertisers

QUEENS — BEES — QUEENS

PURE ITALIAN QUEENS as GOOD as the BEST

$1.00 each, $10.00 a dozen

ALSO PACKAGE BEES WITH QUEENS—NO DRONES

1 two-pound package, $3.50 10 two-pound packages, $32.50

10 three-pound packages, $40.00

Safe arrival and satisfaction guaranteed

ROY S. WEAVER & BRO., Courtney, Texas

CANADIAN BEEKEEPERS

"Chrysler's Process Foundation"

Government tests prove to be the "Best by Test Kind." Made of pure Beeswax. Perfect refining and milling. Thirty-five years' experience. Satisfaction guaranteed.

Other supplies manufactured. Best goods at lowest prices
Send for Catalogue

W. A. CHRYSLER & SON, Chatham, Ont.

BEES AND QUEENS FOR 1928

ITALIANS — CAUCASIANS

Highest Quality, Dependable Service, Full Weight and Satisfaction is what you get from us. Our queens are better this year than ever before. Try them!

Safe Arrival and Satisfaction Guaranteed

Two-pound package bees and queen—1 to 24, $3.50; 25 to 49, $3.25; 50 to 100, $3.00.
Three-pound pkg. bees and queen—1 to 24, $4.00; 25 to 49, $3.75; 50 to 100, $3.50.
Purely mated queens—1 to 24, $1.00; 25 to 49, 85c; 50 to 100, 75c each

Write for our FREE catalog of BEES and SUPPLIES

VALLEY BEE & HONEY CO., P. O. Box 703
Weslaco, Texas

Beekeepers Take Notice

For thirty years we have specialized in the manufacture of **Sections** from the whitest selected Wisconsin basswood

We also manufacture hives, supers, frames and shipping cases

Write for our free illustrated catalog

Marshfield Manufacturing Company
Marshfield, Wisconsin

10,000 QUEENS

FOR 1928 DELIVERY

Guaranteed to be the equal of any queens now on the market

Booking orders now

HERMAN McCONNELL
(The Bee and Honey Man)
Robinson, Ill.

FOR SALE

300 Colonies Bees, 3 Orange and Sage locations.

A. J. FOSS,
CORONA, R'SIDE CO., CALIF.

Canadian Beekeepers' Attention

QUALITY IN SUPPLIES

We specialize in Ruddy Manufacturing Co.'s Bee Ware. The material is specially selected lumber scientifically cured and air dried to ensure the least possible variation of shrinkage or expansion under our severe weather conditions. All work is properly spaced and jointed to give that uniformity, accuracy and smoothness of finish unobtainable with home-made or ordinary planing mill products.

Get Your Supplies Early

Langstroth Hives, Extracting and Comb Honey Supers, Honey Extractors, Feeders, Foundation (Airco and Dadant's Wired), Queen and Drone Traps, Smokers, Honey Knives, etc. Special Prices on Large Quantities.

Write for full particulars of Stock Handled.

STEELE, BRIGGS SEED CO., Limited
Regina, Sask. and Winnipeg, Man.

RED STICK

PURE ITALIAN

QUEENS—PACKAGES—NUCLEI

Wire or write your last-minute orders; we can handle them promptly and correctly. We are ready for a big season, and our RED STICKS are going to make some bumping crops for all who will let them. Decide wisely. We STICK to our word.

Prices April 1 to June 1

Select Untested Queens			
1 to 4	5 to 9	10 to 24	25 to 100
$1.00	$ .95	$ .90	$ .85
Two-pound Packages			
1	2 to 9	10 to 24	25 to 100
$3.60	$3.50	$3.35	$3.20
Three-pound Packages			
$4.35	$4.25	$4.10	$3.95
Two-frame Nuclei			
$3.85	$3.75	$3.60	$3.45
Three-frame Nuclei			
$4.75	$4.65	$4.50	$4.35

Service and satisfaction guaranteed. Health certificate furnished. Pure matings and safe delivery guaranteed. Write for circular and further information. We are not in the flood area.

RED STICK APIARIES, Baton Rouge, La.

BEEWARE

EXTRACTORS

American Cans and Pails, Glass Honey Jars, Wired Foundation
Catalog for the asking

If you wish prompt service, write

B. F. SMITH, Jr., Fromberg, Montana

Package Bees, Nuclei and Queens

April, May and June Delivery

Health certificate. All necessary papers with package bees to Canada. Prompt delivery. Pure Italian stock. 20% with order, balance before shipping date.

Two-pound pkg. with untested queen, $3.75; five pkgs., $3.60 each; ten, $3.50 each; fifteen to twenty-five, $3.40. Three-pound size, each, $1.00 more. Two-frame nuclei with untested queen, each, $4.00; five, $3.90; ten, $3.80; fifteen to twenty-five, $3.70 each. Three-frame size, each, $1.00 more. Queens, $1.00 each, or six for $5.00; twelve, $9.50; fifty, $35.00; one hundred, $65.00.

Write for price on large lots. Begin shipping April 1. Safe arrival guaranteed.

TAYLOR APIARIES, Luverne, Ala.

Three Banded Italian Bees and Queens for 1928

Two-pound packages with untested queens, $3.75

Will book your order without deposit. State certificate with each shipment. I guarantee satisfaction or money refunded.

RAOUL DOMINGUE

Erwinville, La.

MOORE'S STRAIN

Away back in 1879 I commenced rearing Italian queens with the object of improvement constantly in view.

By careful selection during all these years I have succeeded in producing a strain of three-banded, leather-colored Italian bees, known as **MOORE'S STRAIN OF ITALIANS,** which has won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Mr. A. K. Whidden, San Jacinto, Cal., says: "In 1913, 80 per cent of the bees in this district died of European foulbrood. I had an apiary of 60 colonies headed by daughters of your queens in which I did not lose a colony, and in 1914 they made 360 pounds per colony.

"In 1917 I bought 12 queens of you and introduced them to diseased colonies. Four of them became too weak to recover, and they all got rapidly worse until it looked impossible for any of them to recover. In eight of them, as soon as the young bees from your queens began to hatch, the disease began to disappear. They cleaned up and stayed clean."

I am now booking orders for June delivery or later.

Untested queens, $1.00; 6, $5.00; $12, $9.00. Select untested, $1.25; 6, $6.00; 12, $11.00. Safe arrival and satisfaction guaranteed. Circular free.

J. P. MOORE

MORGAN, KENTUCKY

HIGH GRADE GOLDEN AND THREE BANDED ITALIAN BEES FOR SALE. SEASON OF 1928

Not having lost my bees from the flood of 1927, I am in position to offer bees for April and May delivery at the following prices:

2-lb. packages with young untested queen	$3.50
3-lb. packages with young untested queen	4.50
4-lb. packages with young untested queen	5.50

A special package as a nucleus, consisting of two frames of emerging brood and three pounds of bees with young Italian queen, for $6.50. I furnish a health certificate with each shipment. I absolutely guarantee safe arrival all over the United States only. All losses will be replaced upon receipt of a bad order report signed by the express agent. Orders are booked with 10 per cent down. Balance ten days before shipment.

Address, H. H. BORDELON, Box 295, Marksville, Louisiana

Write for Prices on SMITH'S SUPERIOR PACKAGES and QUEENS

FOR NEXT SPRING DELIVERY

Our bees are three-banded, gentle, and good honey gathering Italians. For many years we have sold the same breed all over the U. S. and Canada, always with satisfactory results. Most customers always buy again, so there must be a reason. Give our bees and service a trial and become a satisfied customer. They are CHEAP in price but HIGH in quality. No disease. All express charges paid to your door. Write for folder and prices and be convinced.

N. B. SMITH & COMPANY

SUCCESSOR TO W. C. SMITH & CO.

CALHOUN, ALABAMA

N. B. Smith, Prop., former half owner and manager of W. C. SMITH & CO.

PACKAGE BEES

I QUOTE THE FOLLOWING PRICES FOR 1928 DELIVERY:

Two-pound packages with select young queens:
1 to 24, $3.50; 25 to 49, $3.35; 50 to 100, $3.10 each

Three-pound packages with select young queens:
1 to 24, $4.50; 25 to 49, $4.35; 50 to 100, $4.10 each

Four-pound packages with select young queens:
1 to 24, $5.50; 25 to 49, $5.25; 50 to 100, $5.00 each

Two- and three-frame nuclei at same prices as packages

Tested queens 50 cents extra

I have the best stock of three-band Italian bees that I have been able to purchase or breed. There has never been any foulbrood in this portion of Georgia, and certificate of inspection will be furnished with each shipment. I use liquid feed and guarantee safe delivery. Will replace or refund on receipt of bad order statement signed by the express agent at point of delivery. Will begin making shipments early in April.

The following are some of the unsolicited testimonials sent me by former customers—names will be furnished on request:

Queens Village, N. Y. "Bees arrived in perfect condition. They have built up wonderfully. I must say they are the best bees every way that I have ever owned. I am sure sold on your bees."

Lac du Bonnet, Manitoba. "I am very pleased to state the twenty-five packets of bees arrived here May 5. I don't think there was over one-half pint of dead bees among the lot."

Myrtle, Manitoba. "The bees I got from you several years ago were splendid honey gatherers. I sold two queens of that strain for twenty-five dollars."

Greeley, Colorado. "I have never seen anything to equal the care you take in the packing and shipment of your bees, and I shall certainly help to advertise you as much as I can."

I will appreciate all orders large or small

N. L. STAPLETON, Colquitt, Georgia

LEAHY'S **Bee Supplies** LEAHY'S

High Quality
Prompt Service
Satisfaction Guaranteed

Write For Our 1928 Catalog

LEAHY MANUFACTURING COMPANY

HIGGINSVILLE, MISSOURI

You Can Depend on York's Bees for Honey

Package bees, nuclei and queens. Our bees and customers are our best advertisers. Booked to capacity for April; 95 per cent of orders are from old customers. Can supply several hundred packages and nuclei for May delivery.

Queens will be better than ever before, three-band, leather color Italians of the highest quality and bred for business.

Live and let live prices, satisfaction and a square deal guaranteed.

The place where you get full value for your money.

H. F. YORK

(York Bee Co.)

JESUP, GEORGIA

Reference: Brunswick Bank and Trust Company
Jesup, Georgia

BERRY'S

Reliable 3 Banded Bees

Italian Bees in Packages **Three-banded Queens**

Remember We Prepay the Transportation

Thirty-three years of select breeding gives us a strain of pure Italian bees that for hardiness and honey production are unsurpassed. Our breeding queens are tested out in our own apiaries, in western Canada and the northwestern States, relative to climatic conditions and honey production.

Prices via Prepaid Transportation

1-lb. pkgs. with select untested queens	$3.00 each
1½-lb. pkgs. with select untested queens	3.75 each
2-lb. pkgs. with select untested queens	4.50 each
2½-lb. pkgs. with select untested queens	5.00 each
3-lb. pkgs. with select untested queens	5.50 each
4-lb. pkgs. with select untested queens	6.50 each

Lots of six to twelve packages 25c less each package than the above quotations. All packages full weight on arrival and are filled with young bees. (Note—Customers from western Canada we will refer to our agents at Winnipeg.)

Select untested queens ... $1.00 each, $10.80 per dozen
Select tested queens ... 1.75 each, 18.00 per dozen

Queens' wings clipped free of charge

Write for prices on large lots of either packages or queens.

Bear in mind that we guarantee safe arrival and entire satisfaction in every way. We have no disease, and a health certificate accompanies all orders.

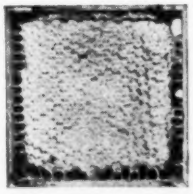
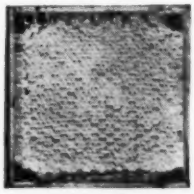
M. C. BERRY & CO.

BOX 637, MONTGOMERY, ALABAMA

U. S. A.

Appearance Sells Comb Honey

Its Quality and Flavor
Bring Repeat Orders

Top and bottom starters of Surplus Foundation result in well-filled sections

Dadant's Surplus Foundation

Is Pure Beeswax and Made to Become a Part of the Comb

Dadant's Surplus Foundation is more than a sheet of beeswax. It is so made that it becomes a part of the honey, a delightfully edible part. We select the very choicest beeswax we can get for it and it is milled by experts who have been studying its making for over fifty years.

Each sheet is dainty and clear, with a delightful fragrance. It is truly a fitting base upon which to build that most splendid product of the hive—section comb honey.

DADANT & SONS

Foundation Manufacturers — WIRED—PLAIN—SURPLUS — *Write for Name of Nearest Dealer* — Hamilton, Illinois

Golden Queens

Beautiful, gentle, and good honey gatherers. Ready for shipping April 1.

Select (one grade only) young laying queens, $1.00 each; ten or more, 90c each. Tested, last fall rearing, $1.75 each. We have a special made, queen laying on comb, self introducing cage in which we guarantee safe introduction of queen. The price is 50c additional.

No disease. Health certificate. Safe arrival and satisfaction guaranteed.

The Golden Apiaries

Letohatchie, Alabama

JASPER KNIGHT, Owner H. N. MAJOR, Manager

JENSEN'S PACKAGE BEES AND QUEENS

Build up quickly into fine colonies. Majority young bees. Queens all young and fresh from our own queen yards. From us you get the benefits of many years' experience plus best three-banded Italian stock, extra weight to offset shrinkage. Prompt shipment. Safe arrival guaranteed. Freedom from disease. Health certificate and all necessary papers to insure proper delivery to you.

Orders booked in advance without deposit. Cash in full five days prior to shipping date. But don't delay that order; send it to us today. Through our service we expect to make you a regular customer. Great or small, we can serve you.

Prices for April and May Delivery

Shipments to Start April 15th

Two-pound Packages with Select Young Queens—1 to 24, $3.50; 25 to 49, $3.35; 50 to 100, $3.10 each.

Three-pound Packages with Select Young Queens—1 to 24, $4.50; 25 to 49, $4.35; 50 to 100, $4.10 each.

Queens, Untested—1 to 9, $1.00; 10 to 24, 95c; 25 to 49, 90c; 50 to 100, 85c each. Prices on tested queens and breeders upon application.

JENSEN'S APIARIES

Crawford, Miss.

REASONS WHY

Thrifty Bees Always Please

Because we give good stock, baby bees, young queens, full weight packages, prompt attention to all orders, good service and satisfaction guaranteed.

Over a third of a century of service to some of America's best beekeepers assures you that THRIFTY Three-banded Italian bees and Forehand's service please.

We have the experience and equipment not only to get your order out, but to get it to you in the best of condition. In every climate and under all conditions THRIFTY bees are guaranteed to please. Safe arrival is guaranteed in the U. S. and Canada.

Prices of package bees with untested queens for express delivery f. o. b. our station. Terms, 10 per cent with order, balance a few days before delivery:

Two-pound packages 1 to 6, $3.70; 6 to 26; $3.45; 26 to 100, $3.25; 100 up, $3.00.

Three-pound packages: 1 to 6, $4.70; 6 to 26, $4.45; 26 to 100, $4.20; 100 up, $4.00.

Untested queens: 1 to 8, $1.00; 9 to 24, 85c; 25 to 99, 80c; 100 up, 70c.

Select untested: 1 to 8, $1.25; 9 to 24, $1.00; 25 to 88, 90c.

Ask for booklet, "Reasons Why." It will help you solve some of your problems.

W. J. FOREHAND & SONS

Fort Deposit, Alabama

Remember, THRIFTY bees are guaranteed to please

BEES

In Any Kind of Package at Any Time You Want Them.

Nice, bright Italians of good honey-gathering strain (John M. Davis)

Queens introduced in nuclei caged inside of combless

Your money's worth or money back

Lewis Beeware and Dadant's Foundation

J. G. PUETT & SONS

MOULTRIE, GA.

Worth $2.00 a Pound to Him

This man wrote: "In season of 1926, I have used twenty-five pounds of your Three-Ply Airco Foundation. Will say that it is the best I ever used. I have used four kinds, but I find Three-Ply the best of them all. It would be cheap to any beekeeper at $2.00 per pound."

J. E. BROWN, Route 2, Kokomo, Indiana



Buy Three-Ply
Airco Foundation

The A. I. Root Company

Medina, Ohio

Root QUALITY BEE SUPPLIES

Glass and Tin Honey Containers

2½-lb. cans in cartons of 100	$4.00	car.
5-lb. pails in cartons of 50	3.50	"
10-lb. pails in cartons of 50	5.00	"
60-lb. tins, NEW, 2 tins per case	1.00	case
60-lb. tins, USED, 2 tins per case	.35	"
160-lb. kegs (the ideal container for both Buckwheat and Clover Honey)	1.20	each

GLASS JARS WITH GOLD LACQUERED CAPS

16-oz. Honey Capacity, 2 doz. per carton	$1.20	car.
3-lb. or Quart Capacity, 1 doz. per carton	.90	"

SPECIAL HAZEL-ATLAS TALL JARS

8-oz. Honey Capacity, 2 doz. per carton	$1.05	car.
16-oz. Honey Capacity, 2 doz. per carton	1.35	"
2-lb. Honey Capacity, 1 doz. per carton	.95	"

BEE SUPPLIES
AT SPECIAL PRICES. SEND FOR OUR PRICE LIST

HONEY
ALL GRADES—ANY QUANTITY

HOFFMAN & HAUCK, Inc. Ozone Park, New York



"Honeymoon Lane"

Brilliant in red, green and gold—Canco pails help your new and repeat business. Three sizes—2½ lb. cans, 5 and 10 lb. pails.

MANY apiarists are so happily wedded to the quality of their honey that they fail to see the imperfections in its dress.

If your honey is good, it is worth packaging attractively, and Canco containers can help you do this.

Canco honey pails help first sales and repeat sales; the first because their bright lithography catches the eye, the second because your name is prominently displayed.

Get in touch with a Canco salesman if you want your honey sales to grow.

Canco honey pails are distributed by

Colorado Honey Producers Association, Denver, Colo.

Dadant & Sons, Hamilton, Ill.

Fargo Seed House, Fargo, N. D.

G. B. Lewis Company, Watertown, Wis.

10 Tivoli Street, Albany, N. Y.
1304 Main Street, Lynchburg, Va.
1921 E. 4th Street, Sioux City, Iowa
318 E. Broad Street, Texarkana, Ark.

W. R. Perry Company
Omaha, Nebraska

B. F. Smith, Jr., Fromberg, Mont.

Standard Lumber Co., Winona, Minn.

Canadian Canco honey containers are now available f.o.b. Brandon and Winnipeg. Apply to Hamilton for quotations

American Can Company

CONTAINERS OF TIN PLATE · BLACK IRON GALVANIZED IRON FIBRE
METAL SIGNS AND DISPLAY FIXTURES

New York
Chicago
San Francisco
Hamilton, Ont.

TRADE CANCO MARK

Sales Offices
in all
principal cities

The Buckeye Hive

Always Ready For Winter or Summer



A *Wonderful Hive and Why*

Bottomboard of full-thickness cypress. One-piece sides and ends, full-thickness, prevent checking and keep packing dry. Takes standard equipment throughout.

SOLD BY ROOT DEALERS EVERYWHERE

Root QUALITY BEE SUPPLIES

The A. I. Root Company

MEDINA, OHIO

Root QUALITY BEE SUPPLIES